AN OUTCOME EVALUATION OF THE SHAWCO SATURDAY SCHOOL PROGRAMME

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COMPULSORY DECLARATION:

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works of other people has been attributed, cited and referenced.

Signature: Signed by candidate Date: 12/12/12

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With deepest affection and appreciation I dedicate this dissertation to my parents Elleda and Silas, as well as my siblings Clarisse, Claire and Carlos. If it were not for them I never would have thought I could go to college and achieve my dreams. Thank you for affording me the chance to study further and for allowing me to be absent when you needed me most. In particular, I applaud my youngest sister Clarisse who looks up to me, for her patience and understanding.

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This work is also dedicated to all adults out there who, despite being surrounded by multiple family and work responsibilities, strive to get an education.

EXECUTIVE SUMMARY

This dissertation reports on an outcome evaluation of the Student Health and Welfare Centres Organisation (SHAWCO) Saturday Schools Programme. This is a professionally-run catch-up educational programme that engages two hundred Grade 12 Cape Town based students. Broadly, the goal of the programme is to provide learners with quality teaching with a view to increase their chances for acceptance into university education.

According to the literature, there remain some inconsistencies in the effectiveness of catch-up programmes across various contexts and subject areas. Some proponents of catch-up education programmes continue to assert that such programmes have positive effects for underprepared pre-university students. However, some other researchers maintain opposing views. Additional evidence is thus required to unlock further the value of these programmes, as the need for their existence is well warranted within the realm of pre- and post- secondary school education.

To evaluate the SHAWCO Saturday School Programme, a single-group, pre- and post-test quasi-experimental design was used. The evaluation used both the 2010 and 2011 cohorts of high school learners who came from 36 secondary schools located within underprivileged communities in Cape Town. Secondary data were obtained from the SHAWCO programme managers who use a non-probability criterion sampling technique to select learners onto the programme based on a pre-determined criterion (performance on two standardised academic potential tests). The selection criterion is such that only the first 200 high-performing learners get selected into the SHAWCO programme.

The evaluation focused on several measures of learners' performance. These included two pre-intervention measures of performance on English and Mathematics, five post-intervention measures of performance on English and Mathematics (short- and medium-term measures), and one long-term measure of performance. Statistical analysis techniques used for the evaluation involved simple descriptive statistics (including measures of central tendency and dispersion), One-way Repeated Measures Analysis of Variance (ANOVA), and multiple regression analysis.

Overall, the results showed that the performance on Mathematics was generally poor compared to the performance on English in both programme periods. For both English and Mathematics, learners tended to perform much better on tests administered through their schools than they did on tests/examinations administered through SHAWCO. Furthermore, performance on National Benchmark Test for both English and Mathematics was generally worse and consistently so in both programme years. The multiple regression analysis showed that gender was generally a weak and statistically insignificant predictor of the long-term performance measures of English and Mathematics. Furthermore, the predictive powers of different performance measures were inconsistent across both cohort years. However, overall the SHAWCO programme attained a reasonable target of learners who made it into the university and tertiary level college education.

It may thus be justifiable to conclude that there is value in exposing academically underprepared high school learners to such programmes to increase their odds of getting into university education. Thus, this evaluation serves as a basis for future evaluations which should aim at substantiating the findings reported here. Such evaluations should consider constructing appropriate comparison groups to differentiate the effects of the programme itself from the differences in the individual-level characteristics of the learners.

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The aim of this dissertation is to evaluate the Student Health and Welfare Centers Organisation (SHAWCO) Saturday Schools Programme. According to the coordinator of the programme, it attempts to close the generational gap that apartheid created in South African schooling (T. Kallungal, personal communication, February 16th, 2012). It is well documented that through apartheid, generic black (African, Coloured, Indian) learners were provided with inferior education (Fedderke, de Kadt, & Luiz, 1998). Although apartheid has been abolished, there is still evidence of disparities between white and generic black scholars. According to Chisholm (2004), many of the schools which most generic black South African learners attend are run down, crammed and not conducive for learning compared to schools attended by their white counterparts. Such learning conditions have been found to be associated with poor quality of education (Fedderke et al, 1998).

The SHAWCO Saturday School Programme is an externally funded initiative. Currently, the funding for the programme comes from Bombardier Transportation (PTY) Ltd., the DJ Murray Trust and Van Schaik Book Store.

SHAWCO is a student volunteer organization which was started in July 1943 by a former University of Cape Town (UCT) medical student, Andrew Kinnear. Kinnear's initiative was prompted by his own experiences with Cape Town communities such as Kensington and Elsies River while he was working as an ambulance driver. His observation of poverty, lack of hygiene and substandard medical facilities in these communities incited his ambition for humanitarian work. Kinnear successfully established a clinic near these communities with the help of the late Dr Golda Selzer who, at the time, was with the Pathology Department at Groote Schuur Hospital (www.shawco.org).

Over time, SHAWCO continued its humanitarian efforts by rolling out its health and welfare programmes throughout South Africa's apartheid era. In 1994, the organization expanded its model from welfare to development. This move was further consolidated in 2003 when the development sector was narrowed to youth education. To date, the SHAWCO model encompasses a variety of initiatives which revolve around primary health care initiatives (SHAWCO Health) and skills development and education programmes (SHAWCO Education) (T. Kallungal, personal communication, February 16th, 2012).

SHAWCO education runs over 10 student projects which are presented in the five SHAWCO centres (Khayelitsha, Kensington, Manenberg and Nyanga), schools and children's homes. These programmes are different in scope and include Kenstep, So Live and Learn, Kensmart, Step, Stepping out, SMART, Little Moon, Masizame, LAWCO, Sports Stars, Sports Pros and STAR (www.shawco.org). Added to the 10 programmes are two Sister Programmes which run on Saturday: The SHAWCO Saturday School Programme and SHAWCO SHINE.

The Saturday School Programme is a professionally-run educational programme that engages two hundred Grade 12 Cape Town based students (The SHAWCO Saturday School Programme Concept Paper, 2011). The core components of the programme are described further below.

Programme Description

Broadly, the goals of the programme are to provide learners with quality teaching and to create a positive learning environment which is conducive for learning. The programme also strives to create a pool of potential applicants for university bursaries, and to equip students with skills to increase their opportunities for acceptance into university education.

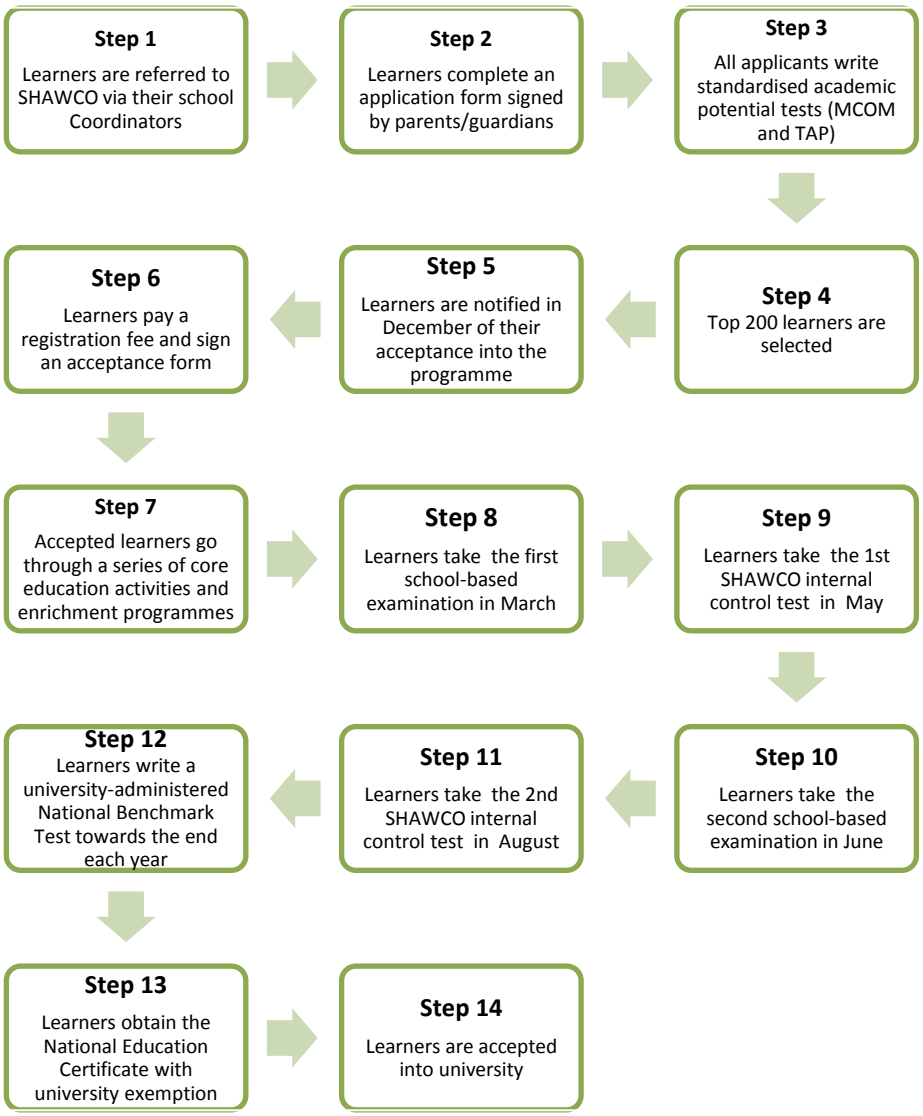
The following programme description was obtained from the SHAWCO website (www.shawco.org), the programme documents (The SHAWCO Saturday School Programme Concept Paper, 2011), and an unstructured interview with the SHAWCO programme coordinator (T. Kallungal, personal communication, February 16th, 2012).

Recruitment and selection of students

All students are selected from disadvantaged communities around the Western Cape region. SHAWCO predominantly focuses on areas in which the organization has community centres and where there are established relationships with partnering schools. Key target areas include Khayelitsha, Nyanga, Kensington, Manenberg, Crossroads, Philippi, Hanover Park and Athlone. For the 2010 programme, SHAWCO has extended its boundaries into Mitchell's Plain, Grassy Park and Wynberg. The partnership between the schools and SHAWCO Saturday School includes regular

meetings with these schools and their grade 12 coordinators. The schools also assist SHAWCO in tracking attendance, assisting with parental participation, and providing academic information (The SHAWCO Saturday School Programme Concept Paper, 2011).

Figure 1 below presents a service utilisation chart which shows how learners progress through the programme. According to Rossi, Lipsey and Freeman (2004), the service utilisation chart is intended to show how and why the intended programme recipients will actually become engaged with the programme and follow through to the point of receiving sufficient services to initiate the change process represented in the programme impact theory.



Note: MCOM is a Mathematics literacy entrance exam which is administered by UCT.
TAP is an English literacy entrance exam which is administered by UCT.
The National Benchmark Test (NBT) is an assessment for prospective first year students into Higher Education. The assessment was designed to measure a writer's levels of proficiency in Academic Literacy, Quantitative Literacy and Mathematics as related to the demands of tertiary study.

Figure 1. The SHAWCO Saturday School service utilisation by beneficiaries

The evolution of the Saturday School Programme

The SHAWCO Saturday School Programme has undergone a series of improvements since its inception in 2006. According to the SHAWCO Saturday School Programme Concept Paper (2011), the programme was conceived in 2006 when SHAWCO was approached by Khayelitsha school principals who suggested that a professionally-run intervention be put in place to help grade 12 learners achieve better results during their matric exams. The programme was then developed, and from 2007 to 2008 a pilot focusing on Grade 12 learners was initiated for the first time in Khayelitsha at Eluxolweni primary school. The first model was refined and piloted again in 2008 at Oscar Mpetha High School in Nyanga.

In 2009, the SHAWCO Saturday school programme was first launched at UCT and has since grown from strength to strength. The learners who joined the programme in 2010 were the first to be selected using a standardised academic potential tests (MCOM and TAP) designed by the Alternative Admissions Research Unit at UCT. During the same year, the Saturday School team focused on adding value to the participants' tutoring experience by recruiting nine top performing educators within the Western Cape and implementing the use of the SHAWCO Saturday School workbooks to the programme.

In 2011, the Saturday School programme broadened its partnership with schools over a wider geographical area around the Western Cape. It now partners with 36 different schools within developing communities and continues to develop a positive reputation within these populations even in the year 2012.

Currently, the SHAWCO Saturday School Programme contains the following activities:

Each year, the whole cohort of learners is broken down into nine groups (A to H plus an additional smaller group Z) according to the results they obtained in the MCOM and TAP standardised academic potential tests. It is compulsory for learners in all the groups to take English and Mathematics but they can choose any other course/s in addition to these two.

Apart from group Z which has a smaller number of students, other groups comprise of about 20 to 30 learners each. Each subject has a specially designated teacher who teaches all learners who are taking that particular subject. On an average Saturday school, learners attend all four periods, each being an hour long. Generally, activities at the programme site start at 9h15am with a morning briefing and end at 14h20 with the last period of class, after which point students are picked up and returned to their respective homes.

Table 1 presents a typical outline of programme activities conducted on Saturday

Table 1

Example of a Saturday School Programme Schedule

Saturday Programme Schedule

Activity	Time
Student Pick up	**08:00am**
Student Drop off at UCT STOP & DROP	**09:00am**
Morning Briefing	**09:15am**
English (period 1)	**09:30 am – 10:30 am**
Physical Science (period 2)	**10:35 am – 11:35 pm**
Lunch Break for teachers and learners	**11:40 pm – 12:10 pm**
Life Science / Accounting (period 3)	**12:15 pm – 13:15 pm**
Mathematics (period 4)	**13:20 pm – 14:20 pm**
Student Return Pick up	**14:20pm**

Table 2 depicts an example of how students from different groups are rotated between classrooms

Table 2

Rotation Schedule for 2010

Group	Period 1 09:30 – 10:30	Period 2 10:35 – 11:35	Lunch-Break 11:40–12:10	Period 3 12:15 – 13:15	Period 4 13:20 – 14:20
A (28)	Maths 1 (Teacher 1)	Physical Science 1 (Teacher 2)	**Lunch-Break**	English Home Lang. 1 (Teacher 3)	Life Science 1 (Teacher 4)
B (28)	Maths 2 (Teacher 5)	Physical Science 2 (Teacher 6)	**Lunch-Break**	English Home Lang. 2 (Teacher 7)	Life Science 2 (Teacher 8)
C (24)	English Home Lang (1) (Teacher 3)	Maths 1 Teacher 1)	**Lunch-Break**	Life Science 1 (Teacher 4)	Physical Science 1 (Teacher 2)
D (24)	English Home Lang (2) (Teacher 7)	Accounting (teacher 9)	**Lunch-Break**	Maths 1 (Teacher 1)	Physical Science 2 (Teacher 6)
E (24)	Accounting (Teacher 9)	Life Science 1 (10) (Teacher 4)	**Lunch-Break**	Maths 2 (Teacher 5)	English Home Lang (1) (Teacher 3)
F (30)	Physical Science 1 (Teacher 2)	Maths 2 (Teacher 5)	**Lunch-Break**	Life Science 2 (Teacher 8)	English Add. Lang (2) (Teacher 7)
G (29)	Life Science 1 (Teacher 4)	English Add. Lang (1) (Teacher 3)	**Lunch-Break**	Physical Science 1 (Teacher 2)	Maths 1 (Teacher 1)
H (20)	Life Science 2 (Teacher 8)	English Home Lang (2) (Teacher 7)	**Lunch-Break**	Physical Science 2 (Teacher 6)	Maths 2 (Teacher 5)
Z (11)	5 - Accounting (Join Grp E) (Teacher 9)	11- Eng Add (Join Grp G) (Teacher 3)	**Lunch-Break**	8- Physics (Join Grp H) (Teacher 6) **(3) Free**	Maths (Join Grp H) (Teacher 5)

Students also benefit from regular enrichment lessons during which guest speakers present on core topics of the curriculum. Throughout the year, motivational speakers are also invited to offer words of wisdom and encouragement to the learners and life skills workshops are conducted to educate learners about cultural diversity and health related issues such as HIV AIDS. During career guidance workshops, presentations by appropriate delegates from corporate, government, private sector are held to help learners make appropriate career decisions. Additionally, learners are also provided

with the opportunity to access some of the facilities at UCT campus such as Botany and Chemistry laboratories (T. Kallungal, personal communication, February 16th, 2012).

Venues

The Saturday classes take place at the UCT upper campus. All lecture venues are on the north side of the university. The programme occupies the RW James Building, the Microbiology Building and the Zoology Building. All venues are classroom like, and are able to accommodate 25 to 35 learners per classroom. The venues have been arranged in a fashion that allows learners to rotate in an efficient manner leaving them five minutes to get from one class to the next

SHAWCO educators

All SHAWCO educators are professional secondary school teachers and are top achievers in their respective areas of education. They are recruited through subject advisors in the Department of Education and by word of mouth. As qualified teachers, they are all currently employed in schools around the Western Cape region. All educators are contracted and paid by SHAWCO UCT and report to SHAWCO's academic coordinator who manages and oversees the curriculum. Normally, teachers are required to sign a contract which will be reviewed after six months.

SHAWCO teachers are required to create a workbook for each subject they teach so that learners can work from it each week. Included in the workbook are notes, examples and exercises for the learner. Due to a relatively large number of scholars, two educators have been recruited for each subject except for accounting where the number of learners is small and therefore can be served by one teacher (T. Kallungal, personal communication, February 16th, 2012).

The SHAWCO project and academic coordinators evaluate the performance of the teachers by making use of teacher assessments completed by the learners, learners' academic results and observational techniques that have been developed by the academic coordinator. If the coordinators are satisfied with the educators' performance then their contract is renewed for the following six months. SHAWCO is also fortunate to be working in consultation with Jonathan Clarke, the Schools

Development Unit Director at UCT, who acts as an advisor to the programme (T. Kallungal, personal communication, February 16th, 2012).

Student transport

All SHAWCO learners are picked up in their relevant townships or Cape Flats communities and safely delivered to the University of Cape Town's Stop and Drop spot where they are dropped off in the morning and picked up in the afternoon. After the programme, learners are also dropped off at their relevant drop off points in the community. They have to sign a transport register on their initial pick up point and sign off again on their return pick up point.

Catering

As most of the learners come from disadvantaged backgrounds, they are unable to provide a nutritionally adequate lunch for themselves. A lunch break is scheduled every Saturday to ensure every student is able to eat a healthy meal during that time.

Programme theory

Programme theory is an important element of any programme that seeks to improve social conditions. According to Rossi et al. (2004), a programme theory depicts the programme's plan of operations, the logic that connects its activities to the intended outcomes, and the rationale for doing what it does. More often than not, if the goals and objectives of the programme being evaluated do not logically tie in with the social conditions which the programme has been designed to address, or the assumptions and expectations in the programme do not constitute a credible approach to attaining the desired outcome(s), it is highly improbable that the programme will be effective (Rossi et al., 2004). It follows then, that when evaluating a poorly conceptualised programme, the evaluator should shift the focus from aiming to establish how well the programme has been implemented to improving the programme design itself.

Rossi et al. (2004) maintain that if a programme theory is implicit rather than articulated, it is important to extract and describe it before it can be assessed. In order to obtain a fully articulated

programme theory for the SHAWCO programme, programme documents (The SHAWCO Saturday School Programme Concept Paper, 2011) were reviewed and a series of structured discussions were conducted with the SHAWCO programme manager. This exercise was aimed at furnishing information about the programme theory as it existed in the SHAWCO Saturday School programme structure and operations.

Based on the programme's implicit theory, forward and backward mapping sessions were held on two occasions with the programme manager. During these sessions programme goals and objectives were articulated, and the programme functions, components and activities as well as the logic and sequence linking them were explicated. The resultant programme theory represented the manager's understanding of how the programme has been designed to work. The client's programme theory is shown in Figure 2.

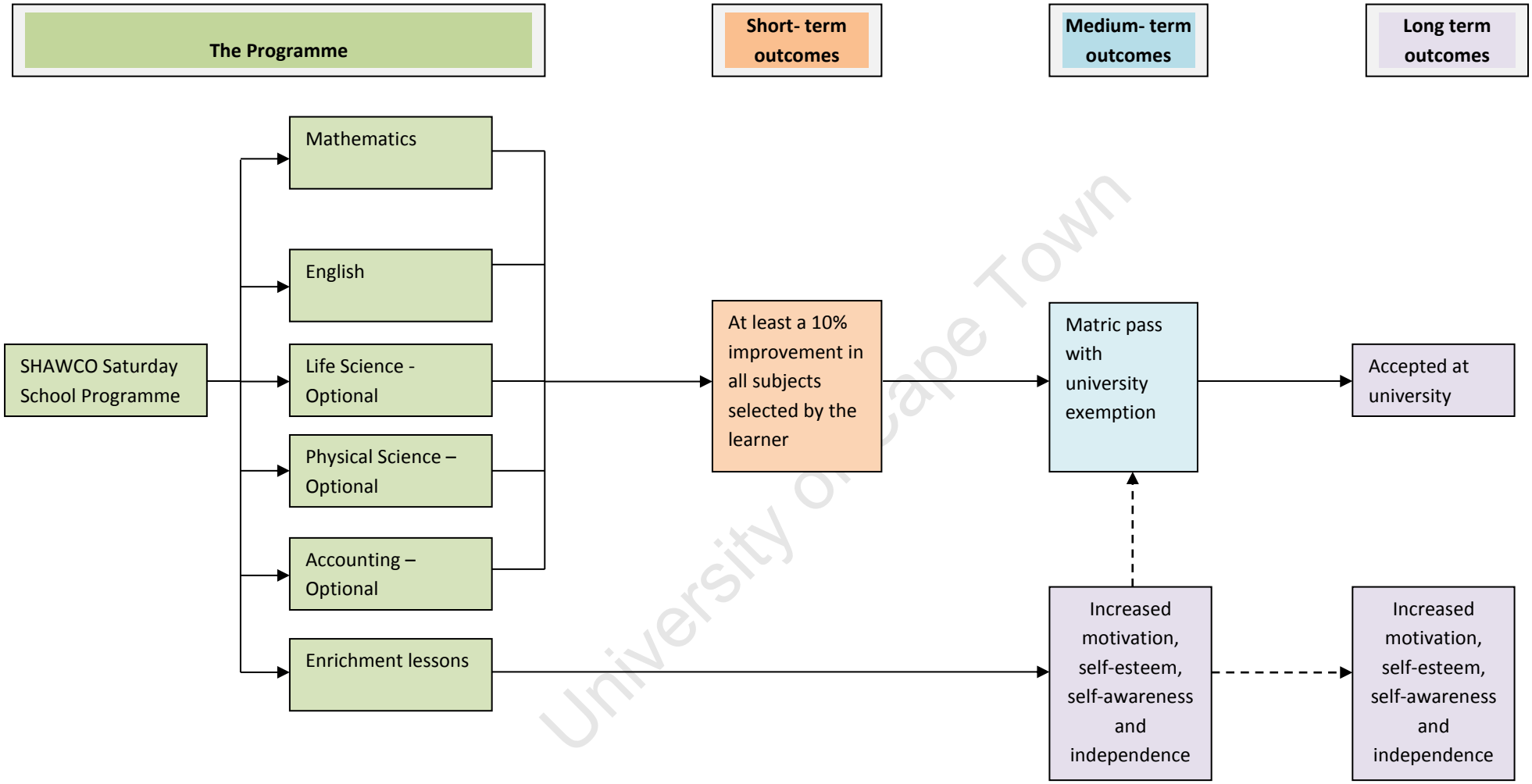


Figure 2. Client's Programme Theory

The SHAWCO programme impact theory depicted in Figure 2 is straight forward. The theory assumes that if learners receive education in the core subjects of the programme as intended (Mathematics, English and one or two additional subjects which can be Life Sciences, Physical Science, and/or Accounting) and write the SHAWCO examination towards the end of the programme, they will attain an overall 10% increase in all subjects they have taken during the SHAWCO programme. It follows then, that a mean 10% increase in all subjects selected by the learner is a proximal outcome and should follow directly from learner's contact with the programme services (the cause). It is also assumed that if learners attain a mean 10% increase in subjects taken, their likelihood of passing the Matric examination with university exemption (the medium-term outcome) will be higher. The outcome further down the chain (the distal/long-term outcome) which follows directly from the medium-term outcome is acceptance into university.

Also worthy of note in the programme impact theory is another chain of events pertaining to enrichment lessons. It is posited in the programme theory that if learners are exposed to two enrichment lessons (at most) during the course of the programme they will achieve an increase in self-esteem, self-awareness and independence both in the medium and long-term. At the medium-term level, these outcomes are presumed to enhance learners' likelihood of passing Matric examinations as per the expected standards.

Assessment of theory plausibility and logic

The logic and plausibility of the client's programme theory are evaluated against the existing literature on developmental education.

Search parameters for the literature review

In order to identify relevant information, a literature search was conducted using some of the commonly known educational and social science databases. Searched databases included the following:

1) Education Resources Information Centre (ERIC),
2) ProQuest Education Journals,
3) Encyclopaedia of Education,
4) Database of Research in International Education and
5) Google Scholar.

Where applicable, the search focused more specifically on peer-reviewed journals and a few theses which are indexed in each database as highly accessed material. In an attempt to minimise publication bias, non-peer reviewed journals and unpublished work were also included in the review. However, these were kept to a minimum.

Books were searched using the UCT's online library catalogue and electronic articles were obtained by means of a web search. Most of the literature obtained, however, was from the United States of America (USA). Literature material from the rest of the world, including South Africa, could not be located.

The Literature search involved the use of one specific word or a combination of two or more key words, e.g. special education, remedial education, developmental education programme, impact of remedial teaching, pre-college boost programme, issues in remedial teaching, and effectiveness of remedial classes on student performance. Specific content areas such as Physics, Mathematics, and English were also used. In order to combine words during the search, conjunctions such as "OR" and "AND" were used. Only studies and books published between 1990 and 2012 were included in the current review. Articles for which only abstracts were available were not included.

Literature findings

Pre-college developmental education programmes have been in existence for many years (Bettiner & Long, 2008). Professionals in the field refer to developmental education as the overall approach to preparing high school or first year university students who are academically underprepared for tertiary education (Boylan, Bonham & White, 1999). In the

USA, students typically take these pre-college level courses while in college to prepare for courses they wish to take as part of their academic programme (Bettinger & Long, 2007). In South Africa however, most high school learners take these courses before they enrol into university or other tertiary institutions (O'Connell, 2009).

For the sake of this review, the term catch-up education programme will be used to refer to developmental education programmes. The effectiveness of such programmes in improving academic skills in Mathematics and English in particular are discussed.

Despite the existence of several catch-up education programmes in South Africa, there is still a dearth of documented literature in this area. The Dinaledi Schools Programme (DSP) is perhaps the most commonly cited catch-up education programme in South Africa. The DSP, as described by O'Connell (2009), has played an important role in South African schooling and academic performance at high school level. The programme was established in 2001 by the Department of Education to increase the number of high school graduates with university-entrance Mathematics and science passes. The strategic objective of the DSP is to select secondary schools that have demonstrated their potential for increasing learner participation and performance on Mathematics and science, and providing them with the resources and support to improve the teaching and learning of these subjects (O'Connell, 2009).

At baseline the DSP selected 102 secondary schools and by 2008 this number had increased to a total of 500 secondary schools (8% of secondary schools in South Africa). Some of the schools which started with the project were eventually eliminated as a result of underperformance. For a school to be selected for the programme it has to have achieved at least 35 Senior Certificate Mathematics passes by African candidates, either at higher grade or standard grade level. So all in all, by 2009 the DSP consisted of 500 schools that were predominantly attended by black learners. During 2008, schools participating in the DSP were expected to achieve 20% (10 000) of the national target of 50 000 learners passing high-grade Mathematics (O'Connell, 2009). For this programme, a pass in Mathematics and science at 50% and above would be considered a minimum higher grade pass.

The DSP is supported through various mechanisms. The Department of Education provides learners in Grades 10-12 with textbooks for each of the seven subjects, as well as scientific calculators. In 2008 a 100-hour training programme was conducted with 2400 teachers from participating schools across all nine provinces to strengthen their content knowledge, improve their teaching skills in Mathematics and science so as to improve learner performance. The training has since been decentralised to provinces and is currently being conducted by a team from the South African Mathematics Foundation (SAMF), higher education experts and subject advisors (O'Connell, 2009). About 233 participating schools have also benefited from computers and online internet access.

The initial evaluation of the DSP has shown some beneficial effects. In 2008, about 24% of the learners who passed Mathematics with 50% and above came from Dinaledi schools. With regards to physical science, in the same year 27% who passed with 50% were also from Dinaledi schools. These findings were however obtained from relatively less rigorous evaluation methods. According to Narsee (2011), there are no consistent criteria for selecting schools across provinces and as such a regression discontinuity design is not possible to use for evaluating this programme.

Narsee (2011) also argues that a randomised control trial cannot be used to evaluate the programme as no counterfactuals (control groups) were identified before the programme was formally introduced. However when a Difference - in - Difference (DID) method with propensity score matching was used it was possible to distinguish programme effects and those arising from pre-existing differences between Dinaledi and non-Dinaledi schools.

An evaluation based on this method found that the Dinaledi programme had improved Senior Certificate examination results in physical science and Mathematics. On average, six more students passed in Dinaledi schools than in similar non-Dinaledi schools. For Mathematics, five more students passed the Mathematics examination in Dinaledi than in similar non-Dinaledi schools. Overall, the programme had positive effects in Limpopo, Kwa-Zulu Natal and Eastern Cape.

Another South African catch-up education programme that's worth noting is the IkamvaYouth Programme. As stated on the IkamvaYouth website (http://ikamvayouth.org) the programme is aimed at equipping children from disadvantaged communities with the knowledge, skill, networks and resources to access tertiary education and /or employment opportunities once they matriculate. The programme is run by IkamvaYouth, a non-profit organisation established in 2003. The organization currently has five branches in three provinces across South Africa. The primary target population of the IkamvaYouth programme is Grade 9 learners who receive the programme until matriculation in Grade 12. The end point of the programme is therefore Grade 12 learners who are able to access tertiary institutions and/or employment-based learning opportunities when they matriculate (Spaull et al., 2012).

According to Spaull et al. (2012), the IkamvaYouth programme involves the following core programme components:

- Supplementary tutoring and homework sessions to help learners improve their grades
- Career guidance to broaden their awareness of post-school opportunities
- Mentorship to ensure that learners access these opportunities
- Computer access and literacy aimed at equiping learners with essential skills and information
- A media, image and expression programme to create opportunities for learners to express themselves creatively and assertively
- And a supplementary health and leadership programme to create awareness of HIV/AIDS, nutrition and broader public health issues.

An evaluation conducted by Spaull et al. (2012), showed a positive outcome of IkamvaYouth Programme. The authors however state that they did not use a rigorous evaluation design to arrive at this conclusion. There was no baseline information and data to construct a counterfactual. Thus, despite the evidence to show that InkamvaYouth beneficiaries outperformed other students in similar metropolitan townships backgrounds, it is not

possible to conclude beyond reasonable doubt that the observed change was a result of the IkamvaYouth programme.

According to the authors, one reason to account for this uncertainty is that the application process, the Ikamva's selection procedures and retention of programme beneficiaries in the long run introduce a bias whereby those who complete matric are likely to be learners who started out more motivated. It therefore follows that these learners may have performed above average even without contact with the IkamvaYouth intervention (Spaull et al., 2012).

In principle, the model of the IkamvaYouth education programme is somewhat similar to that of the SHAWCO Saturday School Programme. Both programmes have almost the same organizational structure, the programme components, the target population (both in characteristics and, to a certain degree, the beneficiaries' stage of education), as well as the medium-term and long-term outcomes.

The literature on South African catch-up education programmes remains limited. However, countries like the USA have provided more literature on their catch-up programmes. Few examples of such programmes and their effectiveness are worth mentioning.

Wepner (1988) conducted an evaluation of a catch-up Mathematics programme in the USA to assess whether Mathematics courses were beneficial to first year college students. The main goal of the programme was to prepare students for standard college level Mathematics courses. Placement scores, pre-test and post-test scores in computation and/or algebra, and final grades in college algebra (Standard Mathematics) class, were gathered from 604 students in the experimental group and 103 students in the control group over a period of 3 years. These were used to see if test scores improved over time in order to determine if catch-up courses were beneficial. Overall, this evaluation showed that students in the experimental group benefited from taking pre-college catch-up courses. However, the author cautions readers that the method used for this evaluation may have misrepresented the true effect of the programme. Similarly, there are other factors which may also account for the observed intervention effect.

Sawyer and Schiel (2000) also conducted an evaluation of an American catch-up programme which was similar to Wepner's (1988) with respect to the methodological approach. However, Sawyer and Schiel's evaluation involved a larger sample of schools. High school graduates who were planning to enrol in their first year of university, and who had below certain screening scores for American College Testing (ACT) or Scholastic Aptitude Test (SAT), were given a test to determine if catch-up courses were required. If students fell below a certain cut-off point on this test, they were required to take catch-up Mathematics, writing or reading courses. After completing the catch-up courses, these students were required to take yet again a standardised test before they were admitted into university. Thus, post-tests which evaluated the same material as the pre-test were always issued after a student completed the remedial course. The post-test provided an indication as to whether the catch up courses were beneficial or not. Although the authors reported that catch-up courses were beneficial, they also acknowledged that there were too many other factors which may have compounded the observed effect of the programme.

Another relevant programme worth of note is a semester-long catch-up education programme which was implemented at a large university in the USA to improve learners' English skills (Aiken, Schwalm, Carroll & Hsiung, 1998). The researchers used a randomised experiment to assess whether being exposed to the programme would lead to better writing skills at the end of just one semester of composition training. The evaluation involved comparing matched students who, by chance, either took a catch-up English course in the fall, followed by the standard course in the spring (Experimental group), or they were exempted from catch-up English course and placed directly into the standard course (Control group). Students were tested in two ways: one was writing samples and the other was a 50 question multiple choice test called Test of Standard Written English (TSWE). Post-test comparison results showed that there were no significant differences in performance of the experimental and control groups on the writing samples and the TSWE scores.

Another commonly cited evaluation of a catch-up education programme in the American literature is a six-year longitudinal investigation by Bettinger and Long (2008). The authors evaluated a catch-up programme among first year undergraduate students in the Ohio public university system. Their aim was to establish whether the participants who receive

catch-up education differed from their matched counterparts with respect to graduation rates, persistence in education and completing a bachelor's degree after transferring from a two-year to a four-year institution. The authors used students' entry scores and exogenous variations related to participants' background characteristics in the choice of school attended to estimate the probability of receiving remediation.

In their evaluation, the authors were able to address one of the methodological flaws that many studies on the effectiveness of catch-up education programmes have failed to address. They were able to effectively control for individual ability and motivation for success. The literature shows that students with abilities and who are adequately prepared for college are more likely to achieve better outcomes (David and Palmer, 2010).

The main finding of this evaluation, which arguably is the most convincing study known to date to have rigorously measured the effectiveness of catch-up programmes, was that students do benefit from receiving such interventions. The authors established that controlling for other covariates, students who received catch-up education were about 11% less likely to drop out and 10% more likely to graduate from university in the six-year timeframe. However, students who received catch-up education in Mathematics were less likely to pursue Mathematics -related disciplines and instead persisted with their original choice of study.

Hebert (2001) also conducted a prospective study in the USA which tracked students in dual-enrolment classes during a five-year period. Dual enrolment is an education system which is predominant in the USA. The system allows students to earn a college credit while concurrently enrolled in high school. In her study, Hebert reviewed academic records of five dual enrolment cohorts in a Mathematics course. The sample only included all the students who scored a C in Mathematics and eventually enrolled in a state college. The sample was then split into two with one half receiving a catch-up programme from high school teachers and the other half from university professors. The author found that students who received catch-up education from high school teachers had higher grades in university Mathematics compared to students who were instructed by university professors during their dual enrolment course.

These findings should however be interpreted with caution. The study did not account for possible interpersonal confounders in the two cohorts. It may be possible that the two groups were different in characteristics such as ability and motivation to succeed in Mathematics. Randomisation between groups would have been one of the more logical designs to establish whether receiving the intervention from a high school teacher or a university professor does have an effect on how well, or badly, a student does in university level-Mathematics.

Conclusion

All the programmes described in this literature share some characteristics in their change theories which are to a certain degree similar to the SHAWCO programme theory. The thinking underlying these theories is that the provision of catch-up education to underprepared learners will increase their performance on the short-run which will ultimately increase their likelihood of accessing tertiary education. Some programmes also aim to increase learners' academic success once they have been accepted at a tertiary institution.

However, the literature generally continues to show inconsistencies in effectiveness of catch-up programme across various contexts and subject areas. As described earlier, some proponents of catch-up education programmes continue to assert that such programmes have positive effects for underprepared students. Other researchers, however, maintain opposing views or argue that the observed effectiveness is often a result of underlying factors that are external to the programme itself (Calcagno & Long, 2008; Attawell et al., 2006).

It is also worth highlighting that the literature discussed here, in general lacked an outline of specific programme activities and how they related to the reported change or lack thereof. This would have added some value to the literature, in terms of providing insights into which programme activities work, and which ones do not. Aside from the IkamvaYouth

programme, the other evaluations largely reported the outcomes and impact and no reference was made to how these were attained or not.

Additional evidence regarding the programme activities is thus required in order to make a judgment regarding the plausibility of the SHAWCO Saturday school programme theory.

Evaluation questions

One of the main aims of the SHAWCO Saturday School Programme is to equip learners with the necessary skills to increase their opportunity for university acceptance. This evaluation will therefore focus on programme outcomes. According to Rossi et al. (2004.p. 58) outcome evaluation is aimed at "gauging the extent to which the programme produces the intended improvements in the conditions it is designed to address". In light of the above, the following questions will be addressed in this evaluation:

Baseline performance before acceptance into the SHAWCO Saturday School Programme

1. What was the performance level of learners in Grade 11 in Mathematics and English?
2. What was the performance level of learners on the MCOM (Mathematics) and TAP (English) tests?

Short-Term Performance

3. What was the performance level of learners in Mathematics and English on the Grade 12 March Examination?

Medium-term performance

4. What was the performance level of learners in Mathematics and English on the 1st SHAWCO test in May?

5. What was the performance level of learners in Mathematics and English on Grade 12 examination in June?
6. What was the performance level of learners in Mathematics and English on the 2st SHAWCO test in August?

Long-term performance

7. What was the performance level of learners in Mathematics and English on the National Benchmark Test?
8. Were the learners accepted into the university?
9. Are they currently attending the university?

Programme effectiveness over a two year period

10. Is there any statistically significant variation in learners' short-, medium- and long-term performance on Mathematics and English within and between the 2010 and 2011 cohorts?
11. Are there any predictors, other than exposure to the programme itself, which explain the variation (if any) in levels of performance on both programme periods (2010 and 2011)?

METHOD

Participants

Participants in the SHAWCO programme were Grade 12 learners who came from 36 secondary schools located within underprivileged communities in Cape Town. Selected demographic characteristics of these learners are shown in Table 3 and 4.

Table 3

Participants in the 2010 cohort

School name	Boys (n)	Girls (n)
Masiyile	2	4
Luhlaza	2	4
Manyano	5	7
Thembilihle	1	2
Iqhayiya	1	0
Siphamandla	3	3
Joe Slovo	2	1
Oscar Mpetha	0	5
Kensington	4	6
Windermere	7	4
Manenberg	7	0
Silverstrem	0	1
Sithembele Matiso	3	0
Thandokhulu	0	1
Groenvlei	3	7
Montview	0	0
Chrystal	0	1
Grassy Park	1	11
Grassdale	2	4
Immaculata	0	18
Wynberg	6	8
Wittebomme	0	4
Mondale	4	20
Westridge	2	5
Glendale	0	1
Zisukhanyo	0	1
Garlendale	5	1
Belgravia	4	6
Crystal House	0	1
Oude Moulen	1	0
Cathkin	1	2
Heideveld	3	4
Sopumelela	1	6
Cape Town High	0	1
Special Case	1	1
TOTAL	**71**	**140**

Table 4

Participants in the 2011 cohort

School name	*Boys*	*Girls*
Masiyile	1	1
Luhlaza	3	7
Manyano	4	2
Thembilihle	0	2
Iqhayiya	1	2
Siphamandla	1	1
Joe Slovo	0	3
Oscar Mpetha	1	2
Kensington	1	10
Windermere	1	2
Manenberg	0	0
Silverstrem	3	0
Sithembele Matiso	1	0
Thandokhulu	0	0
Groenvlei	2	1
Montview	0	0
Chrystal	0	0
Grassy Park	3	11
Grassdale	2	3
Immaculata	0	11
Wynberg	1	1
Wittebomme	4	1
Mondale	7	7
Westridge	2	2
Glendale	0	0
Zisukhanyo	0	2
Garlendale	2	3
Belgravia	1	12
Crystal House	0	0
Oude Moulen	0	0
Cathkin	0	0
Heideveld	2	4
Sopumelela	1	2
Cape Town High	0	0
Alexander Sinton	1	6
Athlone	1	4
Bulumko	3	1
Buren	3	1
Mandela	1	0
Maitland	0	4
Portland	4	5
Rocklands	1	7
TOTAL	**58**	**120**

Data providers

The main data provider for the evaluation was the programme manager of the SHAWCO Saturday School's Programme. According to the programme records, a non-probability criterion sampling technique was followed to select participants for the SHAWCO programme. Criterion sampling is a form of purposive sampling which involves selecting cases that meet certain predetermined criterion of importance (Patton, 2001). Participants are mostly selected based on who is suitable for the study (Babbie & Mouton, 2004).

Participants in the SHAWCO Saturday School Programme were purposively selected based on performance on two standardised academic potential tests. This process involved two steps. Firstly, school coordinators from each SHAWCO participating school (the sampling frame) referred learners to SHAWCO Saturday School Programme coordinators based on their potential for academic success at tertiary institutions. All referred learners then wrote two standardised academic potential tests before they were further selected for the SHAWCO programme. The selection criterion was such that only the first 200 high-performing learners got selected into the SHAWCO Saturday School Programme. The participants selected for the SHAWCO programme will form the basis for this evaluation.

Measures

Evaluation of the SHAWCO Saturday School Programme focused on nine measures derived from the service utilisation plan. Only performance on English and Mathematics was of interest in this evaluation. Table 5 provides a summary of both before and after measures of performance on both subjects over the programme period.

Table 5

Evaluation measures

Before measures	**Data type**
1. Baseline measures for performance on Grade 11	**%**
2. Performance on MCOM and TAP (Academic potential tests)	**%**
After measures	
1. Performance on school-based grade 12 examination in March	**%**
2. Performance on SHAWCO control test 1 in May	**%**
3. Performance on school-based grade 12 examination in June	**%**
4. Performance on SHAWCO control test 2 in august	**%**
5. Performance on NBT	**%**
6. Attainment of university exemption	**Yes/No**
7. Acceptance into university	**Yes/No**

This evaluation utilised secondary data collected by SHAWCO staff over a period of two years (2010 and 2011) and the data have not been analysed before. Data on the measures of interest were gathered from a structured monitoring system established within the SHAWCO Saturday School Programme to document various programme information over a long period of time.

This information was obtained from various sources. Baseline measures for learners' performance on Grade 11 and 12 were provided by all schools participating in the SHAWCO programme. On the other hand, performance on MCOM and TAP, as well as the performance on the SHAWCO internal control tests in May and August were measured and documented by the SHAWCO programme staff. Performance on Matric examination was obtained through the Department of Education, whereas the National Benchmark Tests results were provided to SHAWCO staff by individual universities upon request. Acceptance into university is often self-reported by students although this information can be verified

with individual universities where possible. Information on learner's demographic characteristics was also obtained directly from learners.

The evaluator systematically reviewed the monitoring records to identify the dataset with pertinent information for the current evaluation. Data were then sorted according to school year, measures of interest and selected learner characteristics, after which point it was transferred to a new spread sheet for analysis.

Research design

This evaluation used a single-group, pre- and post-test quasi-experimental design with two pre-tests and seven post-tests. Just like true experiments, quasi-experiments manipulate the treatment (in this case the SHAWCO Saturday School Programme) to force it to occur before the effect (Rossi, Lipsey, & Freeman, 2004). However, according to Shadish, Cook and Campbell (2002), quasi-experiments have to rely greatly on the evaluator's judgments about assumptions, especially on the indispensable concept of plausibility. Judgments about plausibility are needed in order to decide which of the many threats to validity are relevant to the study to be able to decide whether a particular design element could rule out a given threat, or to estimate by how much the bias might have been reduced (Shadish, Cook, & Campbell, 2002).

The design for this evaluation involved two pre-tests. According to Shadish et al (2002), the plausibility of maturation and regression threats is reduced by adding a second pre-test prior to the first pre-test ($\mathbf{O_1}$ $\mathbf{O_2}$ X O_3). The two pre-tests function as a dry run to clarify the biases that might exist in estimating the effects of treatment from the second pre-test to the test immediately following the treatment (i.e. from O_2 to O_3). The multiple post-test measures included in the design for this evaluation have also been described by Shadish et al. (2002) as having the potential to increase the strength of quasi-experimental designs.

Figure 3 illustrates the study design used for this evaluation.

O_1	O_2	X	O_3	O_4	O_5	O_6	O_7	O_8	O_9

Figure 3. Diagrammatic illustration of the evaluation design for the SHAWCO Saturday School Programme

Statistical analysis

The data in this evaluation were analysed using the following statistical analysis techniques:

1. For evaluation questions 1 through to 9, simple descriptive statistics including measures of central tendency and dispersion was used

2. For evaluation questions 10 and 11, the following inferential statistics were implemented:

    a. To examine pre- to post-intervention changes in levels of performance, a one-tailed *t* test and analyses of variance (ANOVA) was used.
    b. A multiple regression analysis was used to examine how much of the variance each of the independent variables (pre-measures 1-2 and post measures (1-6) contributed to the dependent variable (post-measure)
    c. If an indication of unique variance is found in b), further exploration was implemented by adding other independent variables to regression model such as gender, school, attendance etc.

All statistical analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 19. The probability values (*p*) less than 0.05 were considered statistically significant.

RESULTS

Results for this evaluation will be presented under corresponding evaluation questions presented earlier.

Baseline performance before acceptance into the SHAWCO Saturday School Programme

Evaluation question1: What was the performance level of learners in Grade 11 in Mathematics and English?

Table 6 presents a descriptive comparison of learners in the 2010 and 2011 cohorts, with respect to the mean performance on Grade 11 English and Mathematics.

Table 6

First baseline measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=200)							
Baseline Performance on English at the end of Grade 11	59.3	11.84	18	90	53	61	68
Baseline Performance on Mathematics at the end of Grade 11	45.8	15.8	9	89	33	45	57
2011 cohort (N=167)							
Baseline Performance on English at the end of Grade 11	63.6	9.8	39	93	58	63	75
Baseline Performance on Mathematics at the end of Grade 11	51.7	17.2	11	96	40	50	64

Note. Mean, minimum and maximum values are expressed as percentages (%)

a standard deviation

b minimum score attained in that subject

c maximum score attained in that subject

Evaluation question 2: What was the performance level of learners on the MCOM (Mathematics) and TAP (English) tests?

Table 7 shows a descriptive comparison of learners in the 2010 and 2011 cohorts, with respect to the mean performance on the SHAWCO programme entry tests for English and Mathematics.

Table 7

Second baseline measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=196)							
Baseline Performance on TAP (English Entry test)	48.9	14.3	16.5	78.2	38	50	60
Baseline Performance on MCOMM (Mathematics entry test)	28.1	10.6	0	58	20.4	28.1	36.
2011 cohort (N=177)							
Baseline Performance on TAP (English Entry test)	49	12.1	14	76	41	49	56
Baseline Performance on MCOMM (Mathematics entry test)	36.6	14.5	7	90	29	37	49

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Short -Term Performance

Evaluation question 3: What was the performance level of learners in Mathematics and English on the Grade 12 March Examination?

Table 8 shows a descriptive comparison of learners in the 2010 and 2011 cohorts, regarding their performance on the Grade 12 examination for English and Mathematics.

Table 8

First post-intervention measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=196)							
Performance on English - Grade 12 March Examination	61.2	12.8	21	90	51	61	71
Performance on Mathematics - Grade 12 March examination	57.6	20.1	8	99	44	57	74
2011 cohort (N=178)							
Performance on English - Grade 12 March Examination	60.5	13.1	29	89	52	60	70
Performance on Mathematics - Grade 12 March examination	57.1	2.3	1	97	42	58	75

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Medium-term performance

Evaluation question 4: What was the performance level of learners in Mathematics and English on the 1st SHAWCO test in May?

Table 9 shows a descriptive comparison of learners in the 2010 and 2011 cohorts, with regards to the mean performance on first SHAWCO internal control test on English and Mathematics in May.

Table 9

Second post-intervention measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=196)							
Performance on English Control Test 1 in May	60.3	18.2	13	100	45	60	73
Performance on Mathematics Control Test 1 in May	55.8	24.9	8	100	36	56	76
2011 cohort (N=176)							
Performance on English Control Test 1 in May	52.7	15.1	16	91	41	51	62
Performance on Mathematics Control Test 1 in May	49.7	21.3	2	100	32.5	49	68

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Evaluation question 5: What was the performance level of learners in Mathematics and English on the Grade 12 examination in June?

Table 10 presents a descriptive comparison of learners in the 2010 and 2011 cohorts, with respect to the mean performance on the Grade 12 examination for English and

Mathematics. These examinations are written in June each year in the schools where learners come from.

Table 10

Third post-intervention measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=196)							
Performance on English Grade12 examination in June	60	11.5	32	82	52	61	69
Performance on Mathematics Grade 12 examination in June	47.2	23.61	2	94	28	48	66
2011 cohort (N=174)							
Performance on English Grade12 examination in June	60.9	10.7	37	80	53	60	69
Performance on Mathematics Grade 12 examination in June	47.5	17.4	10	93	34	46	60

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Evaluation question 6: What was the performance level of learners in Mathematics and English on the 2st SHAWCO test in August?

Table 11 presents a descriptive comparison of learners in the 2010 and 2011 cohorts, with respect to the mean performance on the second SHAWCO internal control test on English and Mathematics in August.

Table 11

Fourth post-intervention measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=196)							
Performance on English Control Test 2 in August	51.8	17.3	10	95	40	52	64
Performance on Mathematics Control Test 2 in August	47.2	23.61	2	94	28	48	66
2011 cohort (N=170)							
Performance on English Control Test 2 in August	56.4	18	8	94	45	58	68
Performance on Mathematics Control Test 2 in August	44.4	24.4	2	96	24	40	60

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Long-term performance

Evaluation question 7: What was the performance level of learners in Mathematics and English on the National Benchmark Test?

Table 12 shows a descriptive comparison of learners in the 2010 and 2011 cohorts, with respect to the mean performance on English and Mathematics following the National Benchmark Test taken at local universities between November and December.

Table 12

Fifth post-intervention measure of performance on English and Mathematics

	Mean	SD [a]	Min [b]	Max [c]	Percentile		
					25	50	75
2010 cohort (N=193)							
Performance on NBT Academic Literacy	50.2	12.1	28	79	39	50	59
Performance on NBT Quantitative Literacy	41.8	10.3	24	74	34	40	48
Performance on NBT Mathematics	30.3	4.2	24	59	27	29	32
2011 cohort (N=164)							
Performance on NBT Academic Literacy	53.1	10.8	27	82	46	52	60
Performance on NBT Quantitative Literacy	48.3	11.5	27	89	39	47	55
Performance on NBT Mathematics	32.6	7	24	66	28	30	34

Note. Mean, minimum and maximum values are expressed as percentages (%)

[a] standard deviation

[b] minimum score attained in that subject

[c] maximum score attained in that subject

Evaluation question 8: Were the learners accepted into the university?

About 94% of learners in both the 2010 and 2011 cohorts passed the matric examination. Figures 4.1 and 4.2 illustrate the frequencies of learners in the 2010 and 2011 cohorts respectively, who attained university exemption, and those who did not but had other options such as undertaking tertiary college training, certificate courses, and training at special schools

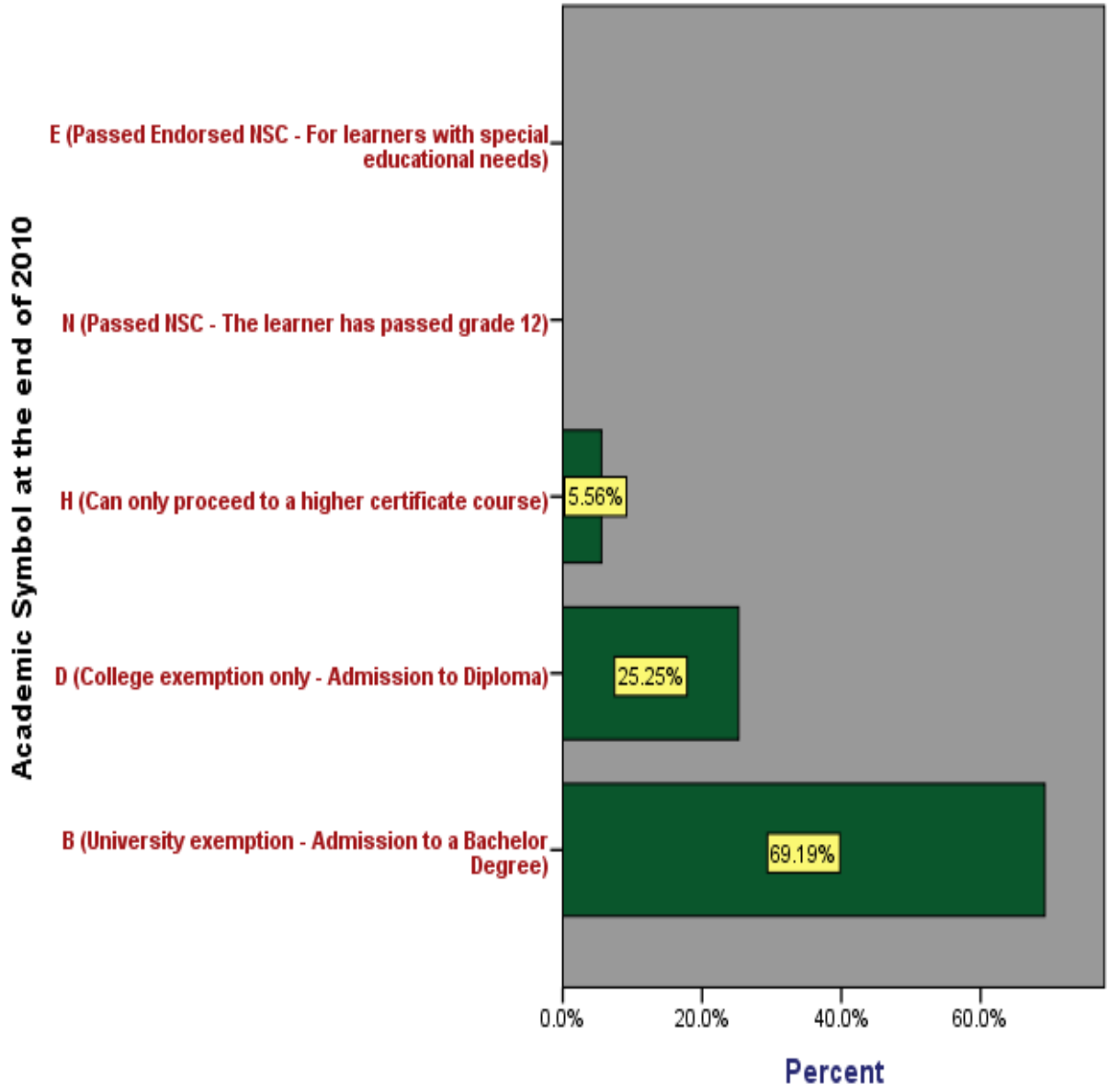


Figure 4.1. Exemption for further education for learners in the 2010 cohort after Matric examination

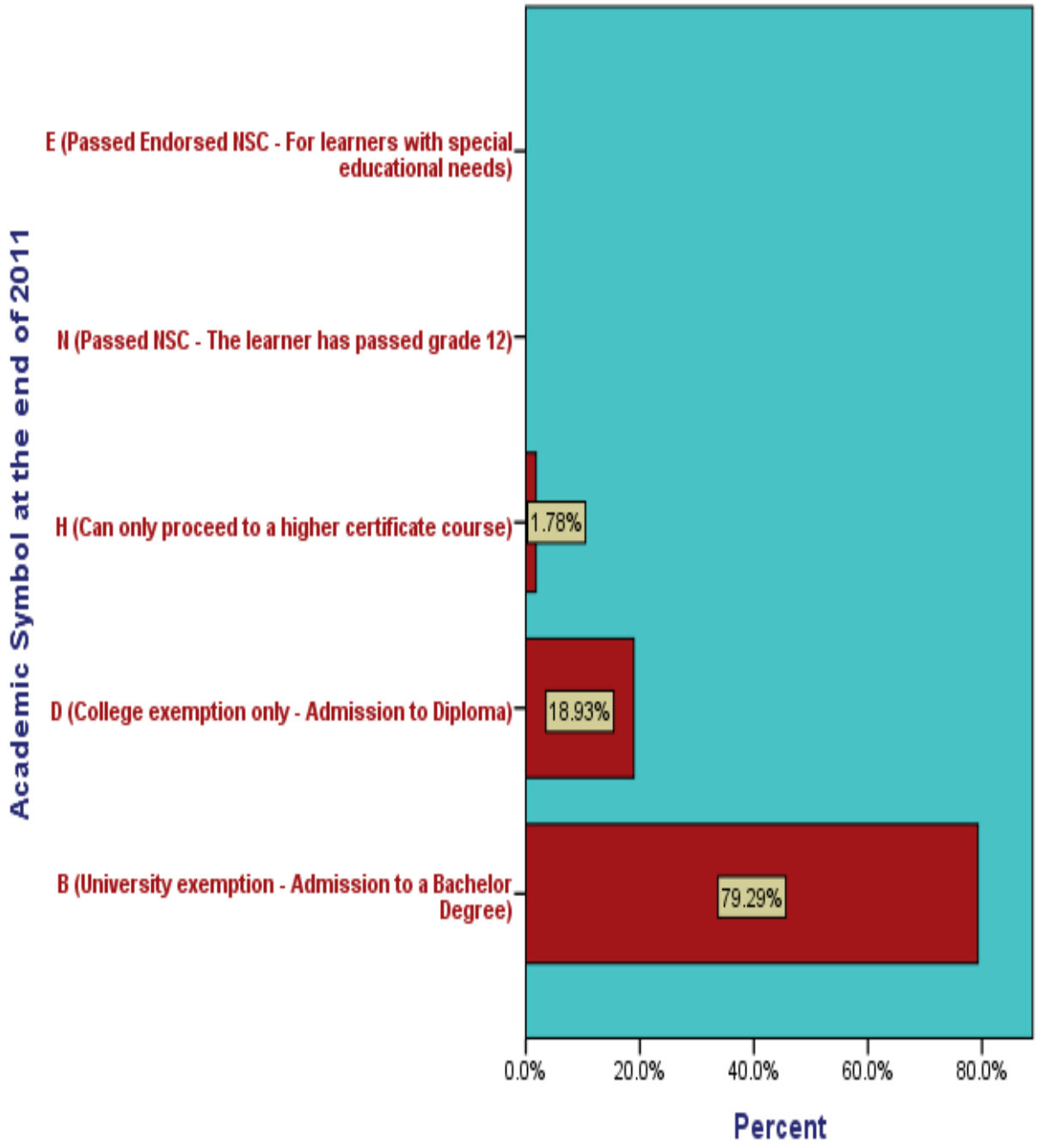


Figure 4.2. Exemption for further education for learners in the 2011 cohort after Matric examination

Evaluation question 9: Are they currently attending the university?

Figure 5.1 and 5.2 illustrate the post-high school status after completing the SHAWCO programme and Matric.

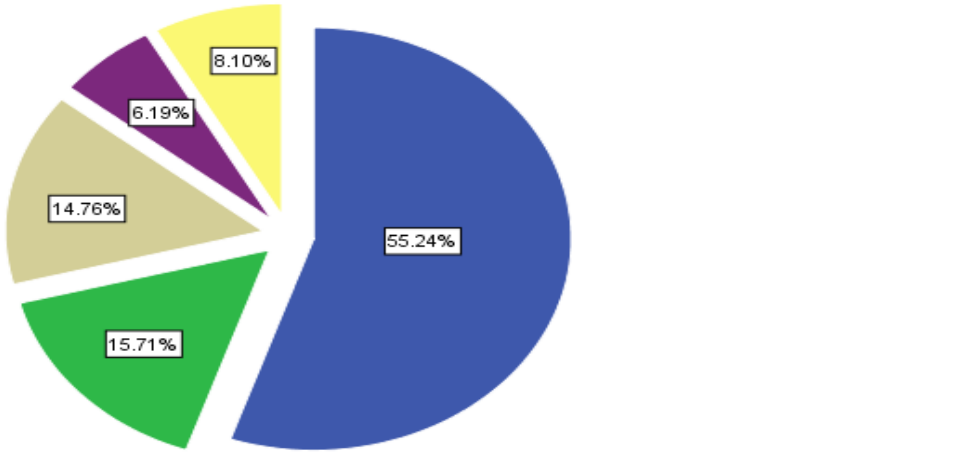


Figure 5.1. Occupation in 2011 after Matric – 2010 Cohort

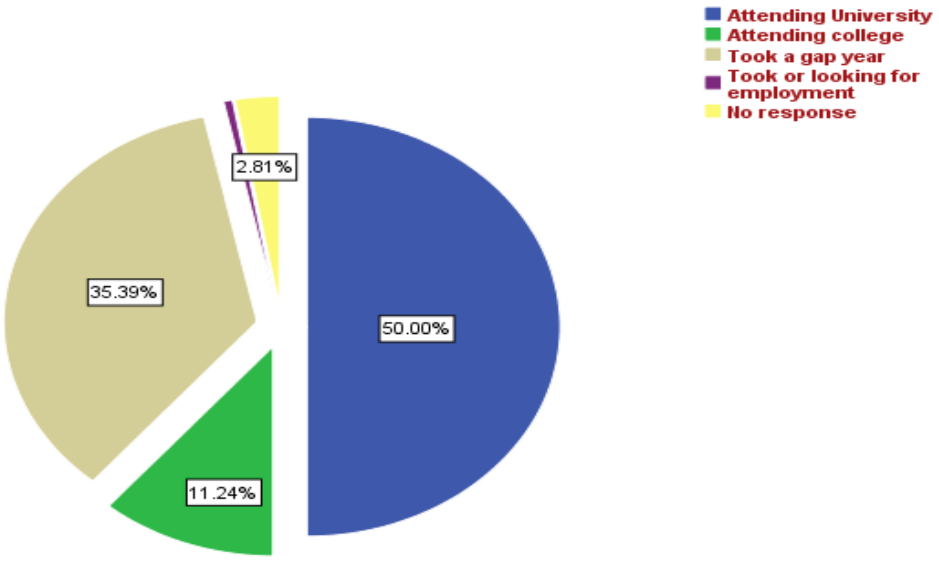


Figure 5.2. Occupation in 2012 after Matric – 2011 Cohort

Programme effectiveness

Evaluation question 10: Is there any statistically significant variation in learners' short-, medium- and long-term performance on Mathematics and English within and between the 2010 and 2011 cohorts?

Figure 6.1 illustrates box and whisker plots depicting comparisons of all measures of performance on English for the 2010 cohort.

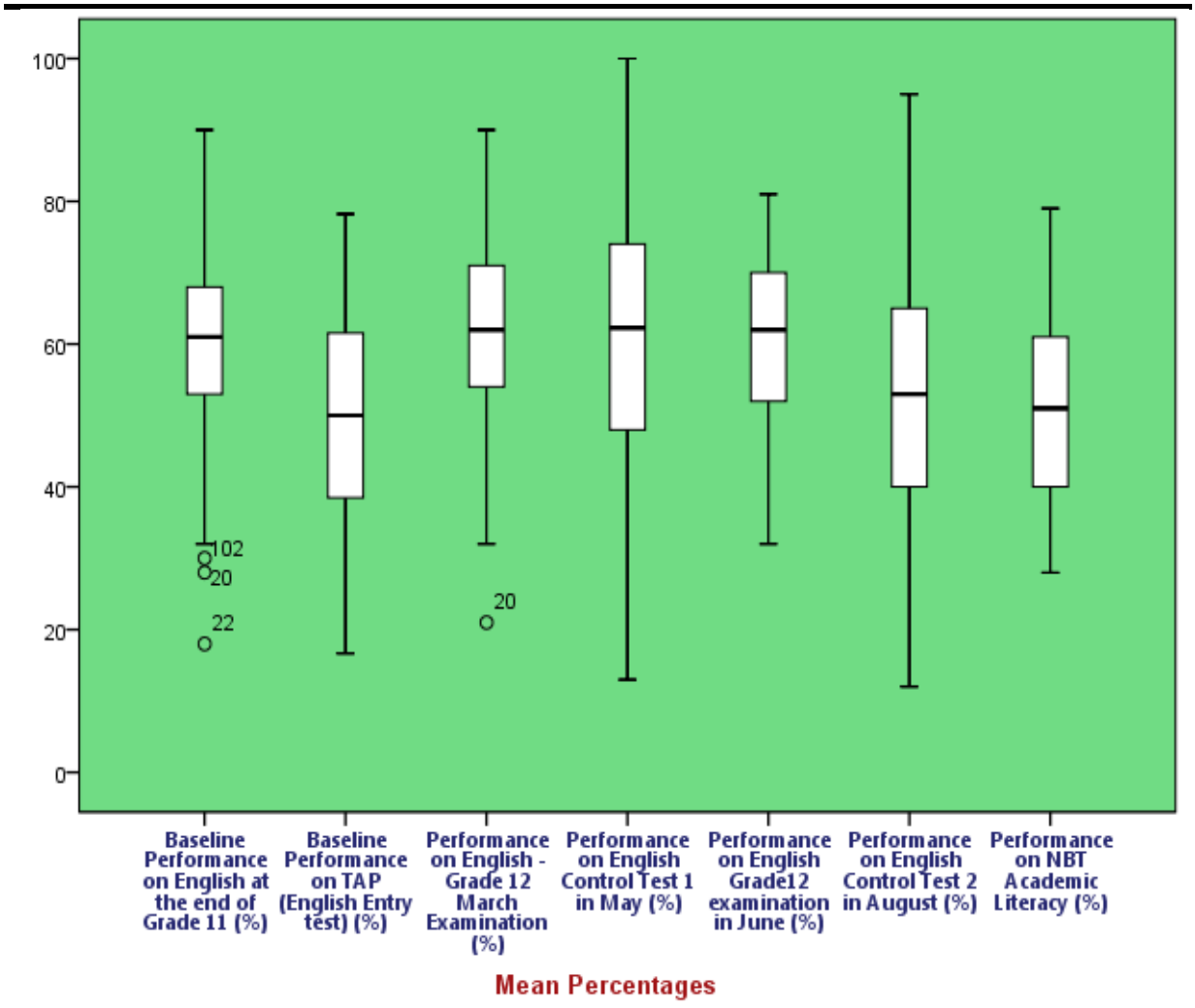


Figure 6.1. Comparison of learners' short-, medium- and long-term mean performance on English for the 2010 cohort

From Figure 6.1 it is clear that the mean performance on English among students in the 2010 cohort varied from one measure to the next. The mean for the medium-term performance was slightly higher compared to the baselines, but declined towards the end of the programme.

Figure 6.2 illustrates box and whisker plots which depict non-parametric comparisons of all measures of performance on Mathematics for the 2010 cohort.

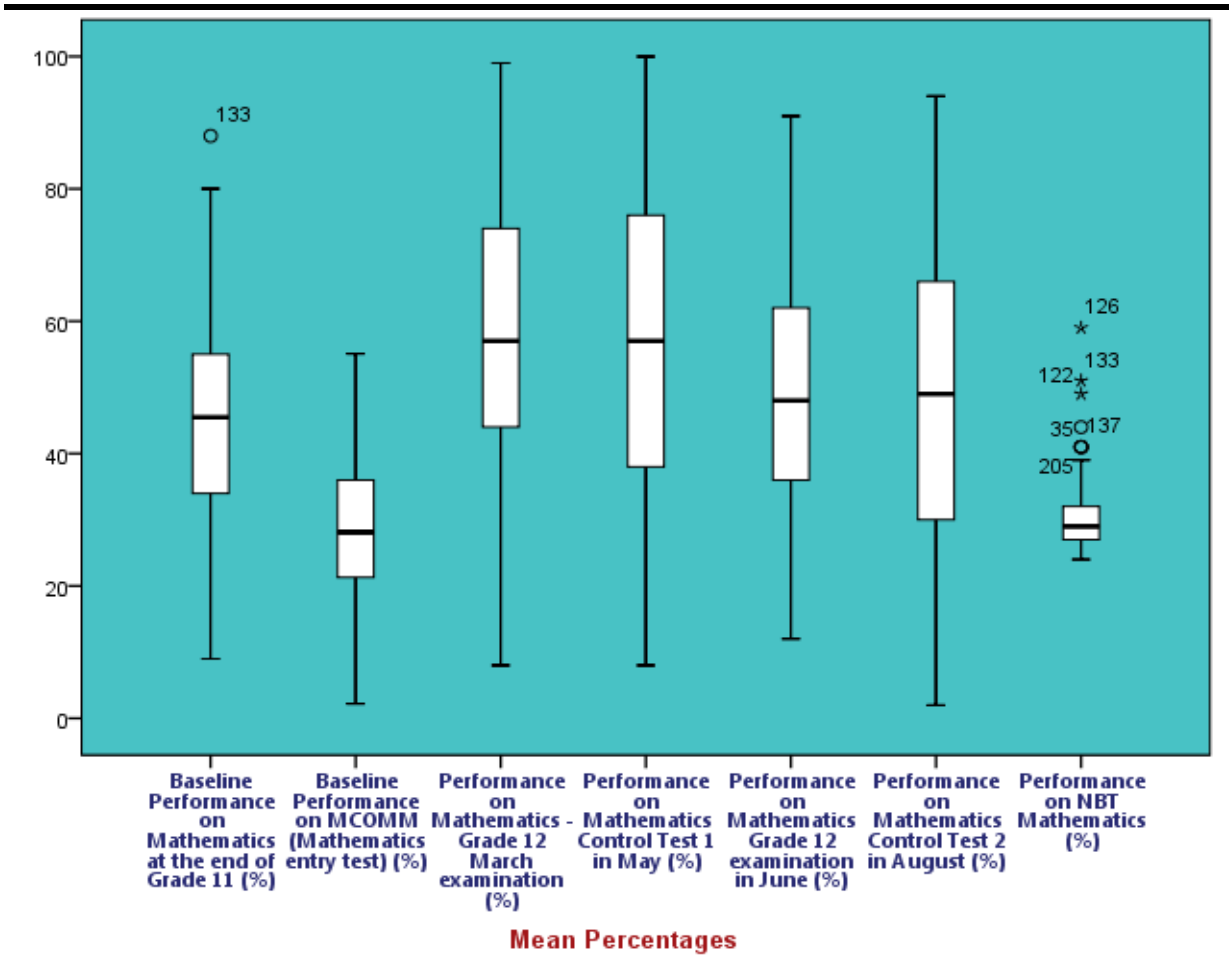


Figure 6.2. Comparison of learners' short-, medium- and long-term mean performance on Mathematics for the 2010 cohort

From Figure 6.2 it is clear that on average, learners in the 2010 cohort performed relatively worse on MCOMM and NBT Mathematics compared to their performance on other measures during the programme. In fact, their mean performances on the MCOMM and NBT Mathematics were the same. The relatively shorter box and whiskers representing the

performance on NBT indicate a small variance in performance within this group of learners. This could mean that the examination was potentially tough for everyone who took it. There were only three outliers whose performance was 50% and above for this particular test.

Table 13 presents results of pair-wise comparisons of mean per cent differences in performance on English and Mathematics, for the 2010 cohort using a One-way Repeated Measures ANOVA. Measures of performance were paired consecutevely from the first measurement to the last.

Table 13

Pair-wise comparisons of mean per cent differences in performance for the 2010 cohort

	Measures of performance	**Mean Diff.**	**Std. Error**	***p*** [b]	**95% Confidence interval for Difference** [b]	
					LB	**UP**
English (N=139)						
	1 vs. 2*	10.57	1.29	.000	6.57	14.56
	2 vs. 3*	-12.99	1.39	.000	-17.29	-8.68
	3 vs. 4	.85	1.47	1.00	-3.69	5.40
	4 vs. 5	.29	1.34	1.00	-3.86	4.44
	5 vs. 6*	8.10	1.17	.000	4.48	11.72
	6 vs. 7	1.65	1.17	1.00	-1.98	5.28
Mathematics (N=139)						
	1 vs. 2*	17.08	1.31	.000	13.027	21.13
	2 vs. 3*	-29.19	1.62	.000	-34.21	-24.17
	3 vs. 4	1.33	1.38	1	-2.95	5.62
	4 vs. 5*	8.22	1.28	.000	4.38	12.31
	5 vs. 6	0.30	1.25	1.00	-3.75	4.01
	6 vs. 7*	17.69	1.72	.000	12.385	23.01

*. The mean difference is significant at the .05 level

[b]. Adjusted for multiple comparisons using Bonferroni test.

Note: LB= *Lower bound* confidence interval, UP= *Upper bound* confidence interval
The **Mauchley's Test of Sphericity** revealed that the sphericity assumption was upheld, $p = .28$

1= Baseline Performance on the subject at the end of Grade 11 (%)
2= Baseline Performance on the subject for the entry test) (%)
3= Performance on the subject for Grade 12 March examination (%)
4= Performance on the subject for the Control Test 1 in May (%)
5= Performance on the subject for Grade 12 examination in June (%)
6= Performance on the subject for the Control Test 2 in August (%)
7= Performance on NBT for the subject (%)

The two negative mean difference values in Table 13 indicate an increase in mean performance between the second baseline measure and the first post-intervention measure for both English and Mathematics . Both these values were statistically significant (p <0.05), meaning that there is a 95% probability that the oberved changes in mean performance did not occur by chance.

On the other hand, the positive mean difference values in Table 13 indicate a decline in mean performance from one performance measure to the next. For Mathematics , the decline in mean performance was higher from measure 4 to 5 and measure 6 to 7, compared to the decline in mean performance for English.

Figure 7.1 illustrates box and whisker plots which depict non-parametric comparisons of all measures of performance on English for the 2011 cohort.

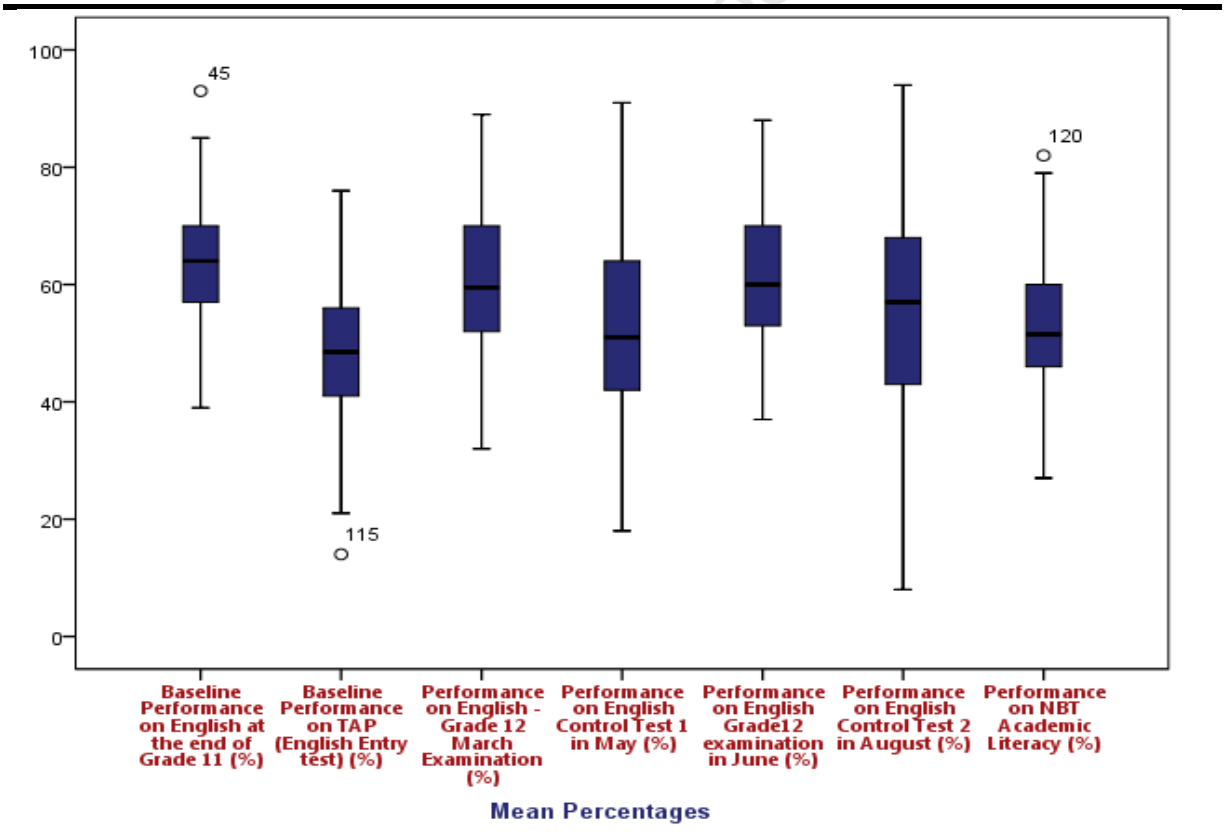


Figure 7.1. Comparison of learners' short-, medium- and long-term mean performance on English for the 2011 cohort

From Figure 7.1 it is clear that the mean performance on English among students in the 2011 cohort also fluctuated from one measure to the next, and ranged between 50% and 70%.

Figure 7.2 illustrates box and whisker plots which depict non-parametric comparisons of all measures of performance on Mathematics for the 2011 cohort.

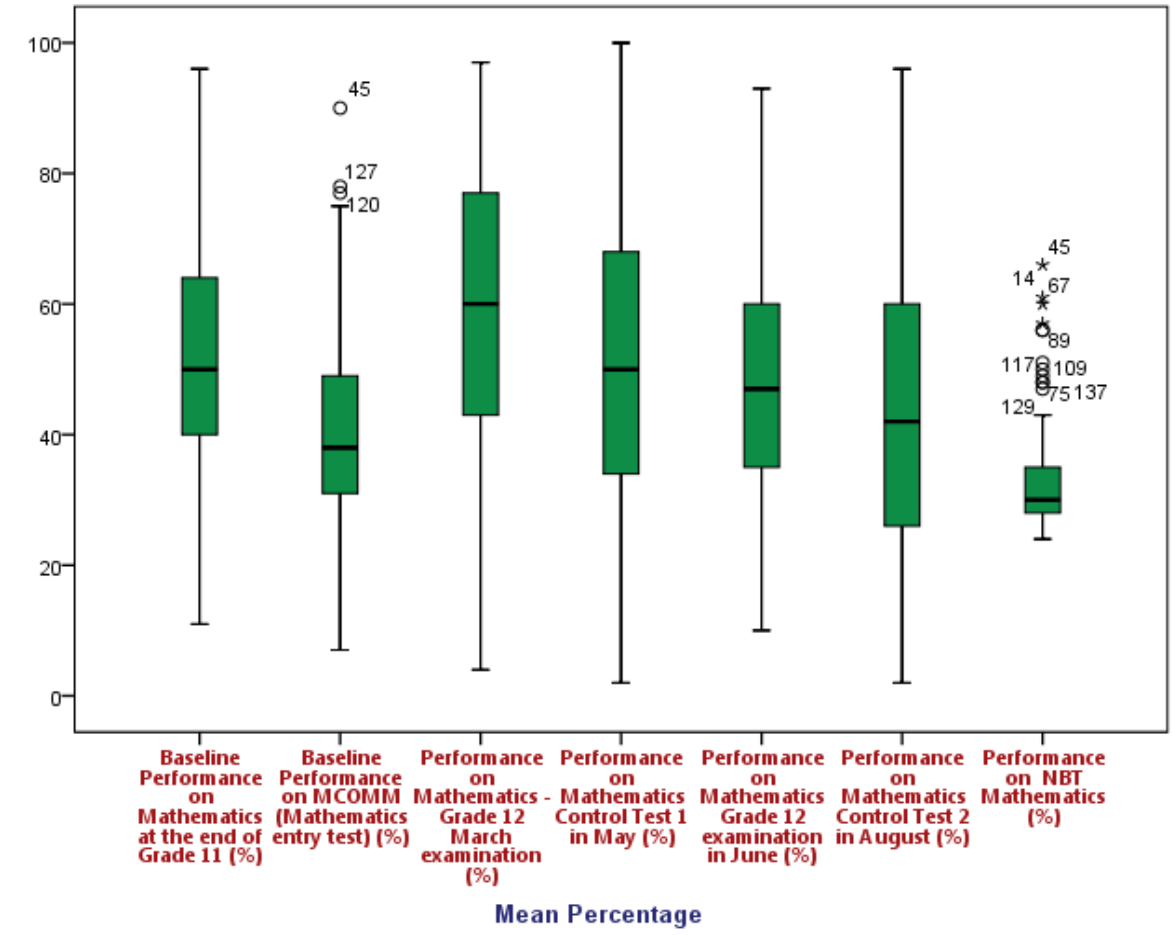


Figure 7.2. Comparison of learners' short-, medium- and long-term mean performance on Mathematics for the 2011 cohort

From this Figure it is clear that the mean performance on NBT Mathematics was relatively poor, with a mean of about 30%, compared to all other measures of performance. Also worthy of note is the fact that performance on this test did not vary greatly despite few outliers who scored higher than 40%. Generally, the mean increased from the entrance

exam to the first post-intervention measure, but from here it declined sharply through to the last post-intervention measure.

Table 14 presents results of pair-wise comparisons of mean percent differences in performance on English and Mathematics, for the 2011 cohort using a One-way Repeated Measures ANOVA. Measures of performance were paired consecutively from the first measurement to the last.

Table 14

Pair-wise comparisons of mean percent differences in performance for the 2011 cohort

	Measures of performance	Mean Diff.	Std. Error	*p* [b]	95% Confidence interval for Difference [b]	
					LB	UP
English (N=146)						
	1 vs. 2*	14.60	.932	.000	11.72	17.48
	2 vs. 3*	-11.51	1.19	.000	-15.12	-7.83
	3 vs. 4*	7.45	1.93	.000	3.79	11.16
	4 vs. 5*	-8.10	1.12	.000	-11.56	-4.63
	5 vs. 6*	4.966	1.27	.003	1.04	10.89
	6 vs. 7	3.28	1.37	.373	-.953	7.51
Mathematics (N=146)						
	1 vs. 2*	11.56	1.48	.000	6.98	16.13
	2 vs. 3*	-18.12	1.72	.000	-23.53	-12.86
	3 vs. 4*	8.384	1.60	.000	3.41	13.35
	4 vs. 5*	2.02	1.43	.007	.84	6.37
	5 vs. 6	3.24	1.57	.86	-1.62	8.10
	6 vs. 7*	12.34	1.73	.000	7.02	17.73

*. The mean difference is significant at the .05 level

[b]. Adjusted for multiple comparisons using Bonferroni test.

Note: LB= *Lower bound* & UP= *Upper bound* confidence intervals

The **Mauchley's Test of Sphericity** revealed that the sphericity assumption was upheld, $p = .45$

1= Baseline Performance on the subject at the end of Grade 11 (%)

2= Baseline Performance on the subject for the entry test) (%)

3= Performance on the subject for Grade 12 March examination (%)

4= Performance on the subject for the Control Test 1 in May (%)

5= Performance on the subject for Grade 12 examination in June (%)

6= Performance on the subject for the Control Test 2 in August (%)

7= Performance on NBT for the subject (%)

The two negative mean difference values in Table 13 for both English and Mathematics indicate an increase in mean performance from measure 2 to measure 3. For other pairs of measures (1 & 2, 3 & 4 , 4 & 5, 5 & 6, and 6 & 7), the mean differences were positive, which indicates a decline in mean performance on each pair. All the changes in mean performance presented in Table 13 were statistically significant ($p<0.05$), except for pair 6 & 7 for English, and pair 5 & 6 for Mathematics .

Evaluation question 11: Are there any predictors, other than exposure to the programme itself, which explain the variation (if any) in levels of performance on both programme periods (2010 and 2011)?

A standard multiple regression method was used to assess the following:

a. How well gender and different short-term and medium-term performance on English predict the long-term performance on this subject. For English, the long-term performance measure was the performance on English control test 2 written in August

b. How well gender and different short-term and medium-term performance on Mathematics predict the long-term performance on this subject. For Mathematics , the long-term measure was performance on NBT Mathematics)

c. How much variance in the outcome measure (long-term performance) for each subject can be explained by these predictors

d. Which of these predictors best predicts the outcome measure for each subject

Collinearity diagnostics, Normal Probability Plot (P-P) of the Regression Standardised Residual and Scatter plots were requested in SPSS as part of the analyses, to ensure that the assumptions of normality, linearity, multicollinearity and homoscedasticity were not violated. Results from the best fitting multiple regression models for the two subjects in each cohort year are presented in Table 15 to 18.

Table 15

Predictors of performance on English control test 2 as an outcome measure (2010 cohort)

			95% Confidence interval for *B*	
Variable	***B*****	***p***	**LB**	**UB**
Constant	-20.86		-32.91	-8.82
Gender	.05	.335	-2.00	5.84
Baseline Performance on English at the end of Grade 11	.32*	.000	.24	.69
Baseline Performance on TAP (English Entry test)	.33*	.000	.26	.54
Performance on English - Grade 12 March Examination	-.12	.161	-.41	.06
Performance on English Control Test 1 in May	.30*	.000	.17	.40
Performance on English Grade12 examination in June	.16	.091	-.03	.52
R^2	.54*	.000		
F	32.50*	.000		

Note. * Statistically significant $p < .01$.
**The Beta coefficients are standardised, meaning that they have been converted to the same scale so that they can be compared.
N=139.

As shown in Table 15, the $R^2 = 0.54$ and is statistically significant. This means that the model presented in the Table explains about 54% of the variance in the long-term performance measure (Performance on English control test 2). Baseline performance on English at the end of Grade 11, Baseline Performance on TAP (English Entry test) and performance on English Control Test 1 in May (%) have the largest Beta coefficients and are statistically significant. It therefore means that these measures make the strongest unique contribution to explaining performance on English control test 2, when the variance explained by all other measures in the model is controlled for.

The Beta values for gender and the rest of the performance measures were not statistically significant.

Table 16

Predictors of performance on NBT Mathematics as an outcome measure (2010 cohort)

			95% Confidence interval for *B*	
Variable	***B*****	***p***	**LB**	**UB**
Constant	16.22		12.754	19.70
Gender	.01	.901	-.92	.10
Baseline Performance on Mathematics at the end of Grade 11	.13	.178	-.020	.10
Baseline Performance on MCOMM (Mathematics entry test)	-.06	.444	-.106	.04
Performance on Mathematics - Grade 12 March examination	.10	.318	-.025	.07
Performance on Mathematics Control Test 1 in May	.01	.917	-.047	.05
Performance on Mathematics Grade 12 examination in June	.22	.051	.000	.13
Performance on Mathematics Control Test 2 in August	.07	.478	-.029	.06
Performance on NBT Quantitative Literacy	.33*	.000	.093	.24
R^2	.44*	.000		
F	12.49*	.000		

Note. * Statistically significant $p < .01$
**The Beta coefficients are standardised, meaning that they have been converted to the same scale so that they can be compared.
N=139.

The model presented in Table 16 explains 44% of the variance in the long-term performance measure (Performance on NBT Mathematics). Of all the predictors presented in this model, performance on NBT Quantitative Literacy makes the largest unique contribution (B = .33)

and is statistically significant. Other predictors make a negligible contribution and are not statistically significant.

Table 17

Predictors of performance on English control test 2 as an outcome measure (2011cohort)

Variable	*B***	*Sig*	95% Confidence interval for *B*	
			LB	UB
Constant	-7.991		-22.12	6.13
Gender	-.009	.875	-4.71	4.02
Baseline Performance on English at the end of Grade 11	.148	.092	-.04	.58
Baseline Performance on TAP (English Entry test)	-.033	.659	-.26	.17
Performance on English - Grade 12 March Examination	.215*	.008	.07	.51
Performance on English Control Test 1 in May	.528*	.000	.45	.80
Performance on English Grade12 examination in June	-.008	.937	-.32	.30
R^2	.52*	.000		
F	29.24*	.000		

Note. * Statistically significant $p < .01$.
**The Beta coefficients are standardised, meaning that they have been converted to the same scale so that they can be compared.
N=146.

The model presented in Table 17 explains 52% of the variance in the long-term performance measure. In this model, there were only two statistically significant and good predictors of the outcome measure: performance on English Control Test 1 (Beta = .53) and performance on English Grade 12 March Examination (Beta = .22), the former being the strongest predictor. The rest of the performance measures were relatively weak predictors and not statistically significant.

Table 18

Predictors of performance on NBT Mathematics as an outcome measure (2011 cohort)

Variable	*B***	*Sig*	95% Confidence interval for *B*	
			LB	UB
Constant	18.458*		13.188	23.728
Gender	-.081	.193	-3.254	.662
Baseline Performance on Mathematics at the end of Grade 11	-.108	.289	-.136	.041
Baseline Performance on MCOMM (Mathematics entry test)	.010	.911	-.083	.093
Performance on Mathematics - Grade 12 March examination	-.133	.142	-.105	.015
Performance on Mathematics Control Test 1 in May	.149	.139	-.017	.123
Performance on Mathematics Grade 12 examination in June	.285*	.003	.042	.204
Performance on Mathematics Control Test 2 in August	.331*	.001	.044	.160
Performance on NBT Quantitative Literacy	.261*	.005	.051	.289
R^2	.49*	.000		
F	17.32*	.000		

Note. * Statistically significant $p < .01$.
**The Beta coefficients are standardised, meaning that they have been converted to the same scale so that they can be compared.
N=146.

The model presented in Table 18 explains 49% of the variance in performance on NBT Mathematics. The three strongest and statistically significant predictors of this outcome were Performance on Mathematics Grade 12 examination in June, Performance on

Mathematics Control Test 2 in August and Performance on NBT Quantitative Literacy. Other performance measures were weak predictors and not statistically significant.

Overall, the results reported in this chapter indicate that the performance on Mathematics was generally poor compared to the performance on English in both programme periods. For both English and Mathematics, learners tended to perform much better on tests administered through their schools than they did on tests/examinations administered through SHAWCO. Furthermore, performance on NBT for both English and Mathematics was generally worse and consistently so in both programme years.

In all cases of multiple regression models presented above, gender was generally a weak and statistically insignificant predictor of the long-term performance measure for both English and Mathematics. Also worth noting is the fact that the predictive powers of different performance measures were inconsistent across both cohort years.

DISCUSSION

As has been discussed in the literature section of this dissertation, catch-up education programmes provide a platform for promoting access to university education and building an educational foundation for success at university level (Bailey and Karp, 2003). As such, these programmes are widely accepted and encouraged in the educational sector. However, the debate continues around the effectiveness of such programmes in relation to their unique characteristics, how large they are, and who are the beneficiaries of the programmes (Finch, 1997).

The current evaluation has focused on one such a programme and generated some interesting findings which are discussed in this chapter. Firstly, the results from questions 1 to 10 are discussed collectively for both the 2010 and 2011 programme periods, as they seemed to relate to each other in a systematic manner. A pattern was observed in how learners in both cohorts performed on each subject. Their significance in relation to the SHAWCO programme is also discussed.

The findings from evaluation question 11, on the other hand, are discussed separately. The emphasis during the discussion of these results is on how these findings contribute to the current knowledge in the same subject area. A comparative assessment is provided on the effectiveness of similar catch-up programmes from selected literature and whether or not they support the results of this evaluation. The chapter then shifts the focus onto the limitations of this evaluation and recommendations for future evaluation are presented. Finally a conclusion is given on the value of catch-up programmes in the South African context.

Evaluation questions 1 to 10

Figures 4.1 to 5.2, as well as Tables 13 and 14 highlight a systematic pattern in learners' performance on both subjects during the two programme periods. They also pull together all the findings presented in Tables 6 to 12 in a more concise and meaningful manner.

For both English and Mathematics and in both programme periods, there was a V-shaped pattern in learners' mean performance, connecting the first baseline measure, the second baseline measure and the first post-intervention measure. A theoretical explanation for this pattern may be that the second baseline measures (TAP and MCOMM, which are SHAWCO's entrance examinations) are set at relatively higher standards compared to the measures set at the level of the schools (i.e. first baseline measure and first post-intervention measure).

Even though the data used in this evaluation were drawn from only two years of the programme implementation, it may not be by chance that this pattern in performance on English and Mathematics was observed. However, setting the SHAWCO's entrance examinations at higher standards serves an important purpose of screening programme beneficiaries based on their academic potential. Thus, it may be in the interest of the programme to maintain these standards if academic potential is to remain the sole criterion for learner selection.

There was also a systematic pattern in the mean performance of learners between Grade 12 examination which is administered at school level, and the Control Test 2 which is administered through the SHAWCO programme. For both English and Mathematics, and in both programme periods, the learners' performance was generally worse on the Control Test 2 compared to the Grade 12 examination. Again, this shift in mean performance could be attributed to the variations in test standards over the programme period. The Control Test 2 must have been tougher than the Grade 12 examination, especially considering that generally, the within-subject variances for these measures were not very large as per box and whisker plots.

Adelman (1999) presents a supportive view in relation to using challenging examinations and coursework for learners receiving catch-up programmes. He argues that this can bear positive long-term outcomes in the learner's performance. In his evaluation of a credit-based transition programme in the USA, he was able to show that the strongest predictor of a bachelor's degree completion is the standard of the examination and the curriculum received by learners during high school education. While it is quite clear that the SHAWCO examination standards are high, it remains unknown whether the standards of the

curriculum content is equally high, or higher than the standards of the normal national school curriculum. It is therefore crucial for the SHAWCO programme to ensure that the examination standards match the curriculum content as any discrepancy will more likely lead to poor performance outcomes for the SHAWCO programme.

It is important to point out that the differences in learners' individual level attributes (such as differential ability to perform better on a test) may have had some influence on these differences in performance. This view has been substantiated in previous evaluations by David and Palmer (2010), Bettinger and Long (2008), Hebert (2001), Sawyer and Schiel (2000), Wepner (1988), as well as Bailey and Karp (2003). These authors argue that outcome evaluations of catch-up education programmes should control for learner characteristics such as prior student achievement and intrinsic motivation to succeed, over and above the programme implementation features, in order to arrive at valid conclusions.

Spaull et al. (2012) also reported a similar limitation when they interpreted the findings from an outcome evaluation of the IkamvaYouth pogramme. They point out that that although the programme had positive outcomes in terms of increasing learners' access to tertiary institutions and/or employment-based learning opportunities, it may be possible that the Ikamva's selection procedures introduced a bias whereby those who completed Matric were likely to be learners who started out more motivated and predisposed to succeed. This argument is particularly important for the current evaluation as the IkamvaYouth education programme is similar to the SHAWCO Saturday School Programme. Both programmes have almost the same organizational structure, the programme components, the target population, as well as the medium-term and long-terms outcomes.

It is thus important for the SHAWCO programme staff to incorporate a variety of learners' individual characteristics related to their learning ability and socioeconomic status, amongst others, part of the baseline data, to allow for more meaningful evaluations to be conducted in future.

Another important pattern noted in learners' performance was that although they were exposed to the SHAWCO programme with a view to improve their knowledge and skills in various subjects, their performance on Mathematics remained generally low across both programme intakes. The fact that this was consistent in both years of the programme is an indication of what performance may look like in subsequent programme cohorts. Thus, it calls for more effort to be placed into further developing the programme in such a way that it will be more effective in improving Mathematics and quantitative literacy for learners who will be recruited next.

In particular, the relatively poor performance on NBT Mathematics deserves some level of attention from the SHAWCO programme staff. It is at this level of measurement where performance was generally low in both cohort years. In addition to being low it tended to be clustered around the mean. This implies that almost every learner who took the test did fairly poorly with a few exceptions of outliers who scored just above 50%. Performance on this test was also generally not that different from the performance on the SHAWCO's entry examination (MCOMM) which might be equally tough.

Although the performance on NBT Mathematics may not necessarily be deterministic of the learners' acceptance into some tertiary level education programmes, it may still be worthwhile to prepare learners adequately for this test. Considering that this is one of the long-term measures of programme performance, and reflects the programme's ultimate effect, more efforts should be placed into ensuring a better outcome. Better performance on this subject could also increase learners' chances of being accepted into a variety of Mathematics-heavy programmes at different universities, such as engineering, science and management degrees.

One very important long-term outcome which was not compared to the short- and medium-term outcomes is the performance on Matric examination for individual subjects. It would have been valuable to compare the learners' mean Matric performance on English and Mathematics with their mean performance on other examinations for the same subjects. However, this was not possible as the Matric results are not usually recorded by the programme staff according to individual subjects. Matric results are routinely captured as a

pass or a fail in the programme records. Thus, the analysis on this outcome focused on the overall pass rate which included all the subjects taken by each learner, including English and Mathematics. The analysis showed that about 94% of learners in both cohorts passed the Matric examination. Of this 94%, about 70% and 80% attained university exemption in 2010 and 2011 respectively. The remainder attained college exemption only, or qualified to proceed to a higher certificate.

In the light of the SHAWCO programme objective, which is to increase the number of learners who can be accepted into university, this is a reasonable achievement. However, this outcome cannot be attributed to the programme effect alone as there was no counterfactual to provide an estimate of what the outcome would have been, had the learners not received the SHAWCO programme. Similar programmes (Brodsky, et al, 1997; Brodsky and Arroyo, 1999) which used a control group to control for pre-existing differences in learners were able to isolate the effect of the programme. Both evaluations showed that learners in the intervention group had higher grade point average in 11^{th} and 12^{th} grades on Mathematics and were more likely to graduate from high school compared to students in the control groups.

Furthermore some education specialists argue that Matric pass rates should not be considered as a good indicator of effective pre-college education, as they may sometimes be adjusted to push up the overall pass rate at national level (Kivilu, 2004). In fact studies conducted at some universities in South Africa revealed some discrepancy between the students' competencies and the high matric marks they obtained to get admission to the university. Naidoo (2004) conducted a study at the UCT to determine basic mathematics competency of 322 first year university students, using a test prepared based on the content covered in the Grade 11 Mathematics syllabus. The findings revealed that 30% of the students who took the test failed, scoring less than 49%, and about 20% scored between 50-59%. A similar study conducted by the Tertiary Education Linkages (TELP) also showed that students' performance on English, mathematics and Science at several universities and technikons in South Africa in 2003 was poor. About 90% of the students failed in mathematics, scoring less than 50% (Kivuli, 2004). Thus, given this evidence, Matric results become a less reliable outcome measure of the SHAWCO's programme effectiveness. It

therefore makes sense for the SHAWCO programme stuff to focus more on other outcome measures which are less likely to be adjusted, especially those taken at institutional level such as NBTs and school-based examinations.

Follow-up measures after the programme revealed that of the 70% who attained university exemption in 2010, 55% were able to attend university in the following year. Similarly, of the 80% who attained university exemption in 2011, 50% were able to attend university in the following year. According to the programme records, those who qualified for university but did not attend in the next year either took a gap year or opted to seeking employment as a result of being unable to pay for university education (Student Health and Welfare Centres Organisation, 2011).

Similar barriers to university attendance have been reported before. Enough evidence continues to show that attaining university exemption is not the only enabler of university attendance. Issues such as the cost of education, opportunity cost for university attendance, demographic characteristics such as gender, and socioeconomic status, amongst others, may hinder qualified learners to attend university education (Liesette, Butt & Déziel, 2001; Christofides, Cirello & Hoy, 2001 and Miles, Lipps, & Zhao, 2003). Thus, if the SHAWCO programme is to achieve more meaningful results in the long run, it should attempt to address other underlying factors on the learner's part. Although learners' university attendance falls outside the main goal of the SHAWCO programme, in future it, may be important for instance to assist learners in the process of securing bursaries for tertiary education. Similarly, following up learners who take a gap year and tracking whether or not they eventually went to university and completed it, and if not, some possible reasons for that, may help programme managers understand how best to help these learners.

The SHAWCO programme results can also be interpreted in light of the one-way repeated measures ANOVA which was used to estimate the mean differences between pre, post and follow-up measures of performance. The instruments and methods used to measure performance for English and Mathematics differed over time. In fact, some tests were administered outside the SHAWCO programme structures. Thus, these tests had potentially been set with unique standards in terms of content. Therefore, where for instance the mean

performance on Mathematics was low, it may have been because the test was just tough, and not because the programme was not effective enough. The results from the one-way repeated measures ANOVA, therefore, only tell a story about which test or examination was harder and the variance attached to it, relative to the rest. They provide little insight into the programme's effectiveness. The one-way repeated measures ANOVA would have been more useful in this regard if the same performance measurement technique and instruments had been used to test learners' performance at different intervals during the programme.

Overall, the results relating to questions 1 to 10 provided some insights into potential differentials in standards used by the schools, SHAWCO and national organizations (Department of Education) to teach and test learners as a way of preparing them for tertiary-level education. For the SHAWCO programme to be more effective, it would be in the interest of the SHAWCO programme staff to craft their curriculum content and didactic methods so as to match the standards of the NBT and possibly to beat Matric examination standards which, as indicated earlier, are arguably lower than what is required at university level. The consistently poor performance on NBT in particular indicates that there is still a mismatch between the SHAWCO standards of teaching and what is expected for this test.

Evaluation question 11

The standard multiple regression analysis showed that being male or female did not make a difference in predicting the long-term performance on English and Mathematics in both cohort years. This finding however contrasts with the findings reported in previous experiments in which gender was an important predictor of high school completion (Hauser, Simmons & Pager, 2004). A study by Swanson (2004) showed that compared to males, female learners do better in high school English. On the other hand, a study by Kurlander, Reardon and Jackson (2008) which investigated middle school predictors of high school achievement in three California school districts showed that male students had, on average, higher passing rates on the high school exit Mathematics and English examination, relative to female students. Failure to detect statistically significant differences in performance by

gender could be attributed to the inherent nature of the evaluation design which did not control for other individual-level predictors of performance.

The observed inconsistencies in the predictive power (or lack thereof) of some short-term and medium-term performance measures pose a question as to whether they should be targeted by the programme staff to improve learners' performance on the long-term outcome. For instance, although the baseline performance on TAP (English entry test) was a good predictor of the performance on English control test 2 in 2010, this was not the case in 2011. Another example is the performance on Mathematics Control Test 2 in 2010 which was a weak predictor for performance on NBT Mathematics. However, in 2011 it was a strong predictor. Thus, it may not be reasonable yet to recommend that the short- and medium-term measures included in the model be used by programme staff to predict the long-term performance on English and Mathematics for future programme cohorts. The results presented here are based on the data gathered over a period of two years only. The predictive power of different measures may be more reliable if data from several programme periods were analysed to see if some partner in the predictive behaviour of each measure can be detected.

A number of other important predictors left out of the multiple regression model are also worth mentioning. For example, the model could have benefited from an inclusion of, *inter alia*: programme attendance, socioeconomic status, race/ethnicity and school where learners come from, as predictors of the long-term performance. These factors have been identified by Kurlander et al (2008) as powerful predictors of performance on pre-university entry examination. They were left out of the model either because there were no pertinent data available, or because the data were incomplete and badly recorded.

The limitations of the current evaluation

This evaluation used a quasi-experimental design. The fact that it was not a true experiment might have exposed it to certain internal validity threats identified by Shadish, Cook and Campbell (2002) even though several post measures were added to the evaluation design.

For example learners may have matured during the programme in ways that are confounders and have nothing to do with the programme. This is particularly possible considering that they received the programme during the last year of high school wherein almost every learner is looking forward to going to university and is more determined to pass the Matric examination.

It is also possible that some learners may have received additional private lessons outside the SHAWCO programme which may have positively or negatively influenced their performance during the programme period. Some learners who started with extreme scores may also have naturally regressed to their personal mean despite the continued exposure to the programme. This may have resulted in the lower scores observed towards the end of the programme.

The way learners were selected for the programme could also have introduced some selection bias in relation to the homogeneity of learners who were part of the programme. The sole criterion for learner selection was the score on academic potential tests and learners were not matched based on individual characteristics which may influence performance on the long run.

Recommendations for future evaluations

A Solomon four-group design or a cluster randomised controlled trial design would have been ideal for this evaluation. This is because these evaluation designs hold the promise of alleviating the internal validity threats identified in the current evaluation (Shadish, Cook and Campbell, 2002). However, for these designs to be meaningfully used, it would be important to work closely with the SHAWCO programme staff and the schools where learners come from to ensure that the data are of high quality. It would be crucial to also ensure that the programme is adequately aligned with the standards of such sophisticated experimental designs. Furthermore, enough resources would have to be mobilised to ensure that the experiment runs smoothly.

Ideally, a practical evaluation would use a two–group, single–blind cluster randomised trial. Randomisation to control and experiment groups would have to be at the level of secondary schools collaborating with the SHAWCO programme personnel. In this design, learners from high schools allocated to the treatment group would receive the SHAWCO programme plus the usual school-led education programme, whereas those allocated to the control group would receive usual school-led education programme only. Since the exclusion of some learners from the SHAWCO programme does not harm them in anyway, and the SHAWCO programme exists as a standalone and supplementary programme, there are no practical ethical concerns to consider for learners who will not receive the intervention.

Blinded assessment would be conducted at 6-11 months post randomization. A comparison of outcomes between the experiment and control groups would assess if differences exist, and to what magnitude, between the experimental and the control groups in terms of performance on English and Mathematics examinations/tests. Participants in this trial would be eligible if they are learners who have just completed grade 11 and have been referred to SHAWCO via their school coordinators as having potential for academic success. Eligible learners also have to be taking English and Mathematics as part of their high school subjects. They should also have attained between 40% and 50% score in both English and Mathematic in their grade 11 end-of-year exams. Learners who do not intend to continue taking English and Mathematics in grade 12 would have to be excluded from the trial. Before any recruitment is done, all learners will be asked to sign a consent form to indicate their willingness to participate in the trial.

Participating learners have to be recruited and baseline data collected prior to the random allocation of schools to control and experimental groups. Due to the nature of the SHAWCO intervention however, blinding of the learners to group allocation would not be possible. However, at the level of schools where learners receive their usual education, educators would be blinded to the overall purpose of the intervention, which is to compare outcomes between those receiving the intervention and those who are not. The SHAWCO teachers would equally be blinded to the purpose of the intervention.

One particular area of the programme which may require some adjustment is the recruitment process for learners who benefit from the programme. Usually, programme beneficiaries are selected on the basis of having academic potential. Therefore, learners who end up in the programme may be those who were predisposed to succeeding anyway. Thus for the proposed experiments, learners would have to be randomly allocated to either the control or experimental groups regardless of whether they have academic potential or not.

Conclusion

Scientific evidence on catch-up educational programmes for high school learners who are underprepared for tertiary-level education remains sparse in South Africa. Although this evaluation was not a true experiment, some of the programme's outcomes reflect its potential effectiveness in producing learners who can pass Matric Examination and who stand a chance to be accepted into tertiary institutions in South Africa. It may thus be justifiable to purport that there is value in exposing academically underprepared high school learners to such programmes to increase their odds of getting into university education. Thus, this evaluation serves as a basis for future evaluations which should aim at substantiating the findings reported here. To justify the value of such programmes, future evaluations should consider constructing appropriate comparison groups as unmeasured factors related to the enrolment selection processes may account for some or all of the positive results (Bailey, 2003). For the current evaluation in particular, it is not easy to differentiate the effects of the programme itself from the differences in the individual-level characteristics of the learners who benefited from the programme. Future evaluations should thus control for learner characteristics, the programme implementation fidelity and determine the impact to see whether the programmes carry sustainable benefits for learners in the long run.

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