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**INTERNAL QUESTION PAPER: 23/2020**

**1340. Mrs D van der Walt (DA) to ask the Minister of Basic Education: to ask the Minister of Basic Education:**

(a) On what date was the Maths, Science and Technology special unit established,

(b) who (i) were the members of the specified unit since it was established and

(ii) are the current members,

(c) what are the details of the results of the tasks to develop a system to have updated

(i) profiles of teachers competences,

(ii) qualifications and

(iii) equipment needed to support more effective teaching of technology and

(d) which (i) programmes were teachers advised to participate in and

(ii) teachers participated in each province to date?

**Response**

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**RESPONSE**

1. The MST Office was established on 01 April 2014.

(i) The members were Ms EM Khembo, Mr DL Silman, Mr T Mokoena, Mr S Mokale.

(b) (ii) Current members are Ms EM Khembo, Mr DL Silman, Mr T Mokoena, Mr S Mokale, Mr N Mathiba, Ms C Patrick, Mr M Mkhwanazi.

1. The details of the results of the tasks to develop a system to have updated data as per the question are that an **electronic data collection tool** (the system) was developed and used to collect the required information regarding:

(c) (i) training needs; and

(c) (ii) training qualifications; and

(c) (iii) equipment needed in support of effective teaching of all MST subjects including Technology.

**EVIDENCE  refer to Excel document attached “EXAMPLE Dinaledi - MST  schools PED Needs Analysis Results” and MS Word document “ Audit instrument for Technical subject teachers”.**

**EMBEDDED IN TABLE and attached separately**

1. (i) and (ii)

Programmes in support of more effective teaching of Technology, including related Mathematics and Science offerings, have been provided as follows as per identified needs and NDP considerations.

| **Problem Statement****(NDP Targets)** | **Planned Activities to Solve the Problem:** | **Summary of progress from August 2014**  |
| --- | --- | --- |
| **All schools offer Mathematics as a subject, and that the number of learners doing Mathematics Literacy is reduced significantly, in order to offer learners a chance in their future careers;** | * Implemented Circular S13 of 2014 to ensure that all schools offered Mathematics and to strengthen the offering of Mathematics and Physical Sciences and not Mathematical Literacy

  | * On 18 February 2016, MOU signed between DBE and TeachSA to increase the supply of Mathematics teachers in Grade 10
* In 2016, 97 Ambassadors (target 100), placed in provinces to teach Mathematics
* In 2017, placed 125 Ambassadors (Target 100), (54 in Eastern Cape alone.)
* Quality of learner performance in NSC significantly improved in schools where Ambassadors were placed**.**
 |
| **Increase the number of****learners eligible for****bachelors programme to****300 000 by 2024:** * **350 000 learners who pass Mathematics and**
* **320 000 learners who pass Physical Sciences.**
* **Increase the number of Grade 12 learners who pass Mathematics and Physical Science through targeted programmes**
 | Through Subject Committees:* **MST Subject Profiles** were mediated to provinces and districts, including quantitative and qualitative analyses and provincial, gender and race breakdown for targeted interventions.

 * **Diagnostic Reports** and **Subject Improvement Plans** were mediated to provinces and districts. This report provides detailed errors and alternative conceptions identified in learner responses and technical suggestions for improvement in teaching and learning at a classroom-based level.
 | * The number of learners enrolled for **Mathematics**  in the NSC Exams has **increased from 229 888 Learners in 2014 to 276 084 Learners in 2017**
* The number of learners who enrolled for **Physical Sciences has increased from 171 549 Learners in 2014 to 191 960 Learners in 2017**
* The number of learners who obtained **50% and above in Mathematics has increased from 13.4% in 2014 to 22,2% in 2017.**
* The number of learners who obtained **50% and above in Physical Sciences has  increased from (22,5%) in 2014 to (26,9%) in 2017**

  |
| * Train all subject advisors in Euclidean Geometry and Probability
 | * Trained all Provincial Coordinators and Subject  Advisors in Grade 10-12 on Euclidian Geometry and Probability
* Developed  ATPs and Teacher Guides for Physical Sciences (Grade 10-12), to develop Lesson Plans
* Developed Lesson Plans for Mathematics Grade 4-9 to improve the teaching and Learning in senior Phase
 |
| * **Improve 2016 NSC Mathematics and Science Results towards achieving NDP targets**

   | **2017 NSC Results Achievements:*** The percentage of candidates that passed **Mathematics increased from 49.1% to 51.9% in 2017**
* The number of candidates that passed **Mathematics at 40% increased from 70 050 (35,1%) Learners in 2014 to 86 098 (35,1%) Learners in 2017**
* The percentage of candidates that passed **Physical Science increased from 61.5% in 2014 to 65.1% in 2017**
* The number of candidates that passed **Physical Science at 40% increased from 62 032 (36,9%) learners in 2014** **to 75 736 (42,2%) Learners in 2017**
 |
| **Improve the average****performance of Grade 3,6****and Grade 9 learners in** **Mathematics**                      | * Implementation of Annual National Assessments in Grade 1-9 Mathematics to improve performance

 * Printed and distributed over 140 million Grade R – 9 maths workbooks to 24 000 public schools since 2012.
 | * Overall achievement of learners in **Grade 3** in the ANA 2014 was 55.5%, with only Gauteng (60,7%) and Western Cape (60,5%), having reached the 60% average mark, with Free State in third place with an average mark of 58,5%.
* Achievement of learners in **Grade 6** in the ANA 2014 was at an average of **43,1%** in the ANA 2014, with provinces showing improvement from the ANA 2013; with Gauteng leading at 51,1%, followed by Western Cape at 50,9% and Free State at 47,7%
* The levels of learner performance in Grade 9 ANA were unacceptably low in 2013 and 2014. The national average performance 13.9% and 10.8% respectively. In 2013, NW, NC, MP and LP performed below the national average of 13,9%. In 2014 KZN, LP, NC and NW performed below the national average of 10,8%.
 |
| * Improve TIMSS & SACMEQ scores (2011) towards achieving NDP targets
 | * TIMSS Grade 5 Mathematics (376 points), Grade 9 Mathematics (372 points) and Grade 9 Science (358 points)
* SA showed the highest improvement of 87 points in Grade 9 Maths from 2003 to 2015
* SA showed the highest improvement of 90 points in Grade 9 science from 2003 to 2015
* 3.2% of SA learners scored high levels of grade 9 maths achievements
* In Grade 5 Maths SA is the only country amongst the lowest performing countries in which learners were benchmarked at the “Advanced” level (scoring above 625 points). 1.3% of SA learners scored above 625 points
 |
| * Implement 1+4 Intervention Model in all provinces to improve curriculum coverage and Mathematics performance in the Senior Phase (Grade 8&9)
 | * 5524 Teachers received Grade 8&9 Lesson Plans and Annual Teaching Plans (ATPs); and
* A Diagnostic Report was developed from analysing Pre/Post-tests)
 |
| * In 2017 Term 1, Provinces ran Grade 8 and 9 Quarterly Maths Workshops for teachers at the beginning of the term
 |
| **Maths, Science and Technology Conditional Grant to promote Mathematics and Physical Science and Technology teaching and learning and improve teachers’ content knowledge of Mathematics and Physical Science.**                                         | * Recapitalise 200 Technical Schools and Resource 500 Dinaledi Schools
 | * 200 Technical schools recapitalised
 |
| * Resource 500 Dinaledi Schools with Mathematics and Physical Sciences equipment, including Laboratory consumables and tools
 | * 500 Dinaledi schools were resourced with Mathematics and Physical Sciences equipment
 |
| * Reconfigure the Dinaledi and Technical Schools Grants into MST Grant for support to 1 000 schools (200 Technical, 500 Secondary, 300 Primary)
 | * Reconfigured the Dinaledi and Technical Schools Grants into MST Grant in 2014
* In 2015: Supplied resources to 1 000 schools; Trained 1 500 teachers; and Supported 90 000 learners
 |
| * A total of 4.2 million Grade 10 and 11 Siyavula Maths and  Science textbooks printed and distributed to all schools since 2012
* MST grant - support 34,765 learners (8,754, 22,370 and 3,641 learners participated in Eskom Expo and Maths Olympiad and other competitions including study camps focusing on Maths and Science);
* MST Grant - Maths and Science kits were delivered to 689 schools with the support of the MST
* MST Grant - 3 131 Teachers and Subject advisors trained in the new Technical subject specializations
* MST Grant - Trained 228 and 133 teachers in Technical Mathematics in Grades 10 and 11 respectively;
 |
| * **Hosted a CAPS for Technical Schools Roundtable on 04 December 2015**:
* To create an opportunity to share with stakeholders the strategic direction of government and the sector;
* To evaluate progress made in preparing for the implementation of CAPS for Technical High Schools;
* To create an opportunity to evaluate the appropriateness of Technical Mathematics and Physical Science;
* To generate ideas on strengthening the South African Three Stream Model of Basic Education;
* To make an effort to strengthen strategic partnership between government departments, quality assurance bodies, South African Qualifications Authority, Private sector, NGOs, Business, Labour, NEDLEC, National and International donors;
* To reaffirm the role of Monitoring Evaluation and Research in measuring impact, tracking progress and informing best practice
 | * Task team established between DHET – TVET and DBE on the alignment of curriculum and Concept paper on curriculum alignment developed between DHET – TVET and DBE
* MOU with merSETA signed for all the specialisations
* Partnership with DHET includes advocacy on Decade of the Artisan; alignment of Curriculum on TVET Colleges
* CAPS for Technical Schools implemented in Grade 10 in 2016 and Grade 11 in 2017
* Appointed Project Manager to facilitate relationship between DBE and Industry to increase Apprenticeships and Artisans
 |
| * Promulgate **Gazette No. 39435** regulating the introduction of the new Technical subjects curriculum  including Technical Maths and Sciences in **1007 Technical Schools** in 2016-2018 in Grade 10-12
 | * The number of learners from **585 schools** offering Specialisations has increased to **37 093 in Grade 10 in 2016**
* 1007 Technical schools supplied with CAPS Policy Documents for Technical Schools for implementation in Grade 10-12, in 2016, 2017 and 2018 respectively
* Versioned CAPS documents into

 * In 2015:Trained **1660** Grade 10 Subject Advisors and Teacherson Specialisations at Skills Training Centres; and Technical Maths **(223)** and Technical Sciences **(203)**
* In 2016**:** Trained **1 471** Grade 11 subject advisors and teachers in Specialisations at **Skills Training Centres;** and
* Trained **345** Grade 11 Subject Advisors in Technical Maths & Sciences
 |
| * Implemented **Circular S6 of 2016** with Interim Guidelines to ensure compliance with CAPS Policy and Gazette No, 39435 on implementation of new curriculum
 |
| **The sector has not fully leveraged on Partnerships to support government in improving performance in MST**                                                                                      | * DBE Hosted an **MST Roundtable (2014)** with the recommendations from Cabinet to establish a Steering Committee between DBE, DST and DHET.
 | * 10 meetings were held wherein a Draft MST Integrated Framework was developed with 26 key deliverables in short, medium and long-term action to 2030.
* A reviewed Draft MST Strategy with Implementation Plan was developed
 |
| * Refinement of the MST Strategy developed by DBE/DHET and DST in collaboration with JICA
 | * MST Strategy refined and consultations completed with PEDs, Unions, Universities and Professional Associations

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| * Draft agreement and manage the process leading to the formal recognition of the **DST,DBE DHET MST Trilateral protocol of Implementation of the MST Strategy**
 | * Changes to the document were made as directed by DBE Legal Services.
* Submission requesting DG approval was sent to ODG in June 2017.
 |
| * **Hosted the 3rd  MST Roundtable (19 March 2015)**, to strengthen the National Mathematics, Science and Technology Strategy Plan to improve participation and success rate in MST
 | * Framework partnerships developed with NECT
* MOU signed with TeachSA and 97 Ambassadors placed in provinces in 2016 and 125 in 2017
* MOU signed with British Council to pilot the IRIS Connect professional development of teachers being implemented focusing on teacher reflection
 |
| * Maths Indaba hosted on 12-14 Dec 2016, to develop a South African pedagogical-content knowledge approach that will inform the teaching and learning of Mathematics,

The integration of assessment into the teaching and learning of Mathematics; and The writing of Mathematics textbooks; andThe initial teacher education Programmes | * A Task Team was appointed by the Minister that will  develop a Framework for Mathematics that will inform the central tenets of the teaching and learning of key Mathematical competencies, from Grade 1 through to Grade 12 (14 members)
* On 19 March 2018, Minister approved the Framework
* To be implemented in 2019, January
 |
| * Implement the DBE-CHINA Agreement
 | * Two DBE officials attended a Seminar on Engineering Education and Management for Developing Countries held (March 10– March 29, 2016  for 20 days) at Tsinghua University, China; and
* Launch of Planetarium  donated by CEIEC on 7 March 2016, at Sci-Bono Centre
 |
| * **To implement DBE-JICA Agreement**
 | * 192 schools in EC and NW participated in the pilot where learners’ performance in Mathematics problem solving has significantly improved and SMT played their role as curriculum managers in the ***In School Support Programme.***
 |
| * 12 Foundation Phase and Intermediate Phase Subject Advisors from Eastern Cape and North West provinces from 09 November to 10 December 2016, trained in Maths at Naruto University, Japan
 |
| * **Implement the DBE-TEACHSA MOU**
 | * MOU signed in February 2016
* Placed 97 Ambassadors in GP & KZN schools to improve participation and performance in Mathematics and Physical Sciences
 |
| * 179 Ambassadors underwent two week residential induction programme in January 2017
* Allocation of Ambassadors is currently underway: 13 to be placed in Limpopo DoE.
* E Cape DoE requested 79 ambassadors.
 |
| * **Implement the DBE- British Council MOU**
 | * MOU signed to implement  the IRIS Connect - a teacher reflection platform pilot programme  introduced in 6 schools in Ekurhuleni South District, Gauteng
 |
| * **Implement the DBE - Bright Media Collaboration**
 | * 45 workshops conducted reaching 2 375 Maths Literacy teachers, with no less than 15 000 teachers reached since the project’s inception in 2007.
 |
| * Funding secured by Bright Media to develop Technical Maths & Science workbooks for teachers in 2017
* Currently workshops for Technical Maths being run in provinces by Bright Media
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| * **Implement the DBE-SAASTA Collaboration**
 | * 109 Grade 12 Life Sciences teachers were trained by Life Sciences experts over a 3 day period on Content and Methodology on Evolution Genetics, Human Impact on the environment and Human Reproduction
 |
| * 413 educators trained and supplied with Technology Toolkits to Grade 7-9 schools and Life Sciences Content Training.
 |
| * **Train all Grade 11 and 12 teachers and subject Advisors in Delphi for implementation in Grade 11 and 12 in 2016 and  2017**
 | * 102 teachers and 9 Subject Advisors in KZN, NC, WC trained by Tshwane University of Technology (TUT) & ITHEMBA LABS in Delphi
 |
| * **Implement the DBE-MERSETA MOU**

   | * MOU signed with DBE and PEDs involving R50 Million to Technical Schools to promote Artisanship in 10 schools for 210 learners.
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| Names of 10 Schools in the merSETA project (2017):* Emmang Mmogo (NC)
* Badiredi (NC)
* Isikhoba Nombewu (EC)
* Justice Nxumalo (KZN)
* Bellville Technical School (WC)
* Hazyview Comprehensive (MP)
* Pax Technical High (LP)
* Barnard Molokoane Technical (FS)
* Soshanguve Technical (GP)
* Tlhabane Technical High (NW)
 |
|   | * Implementation and management of **South Korea - DBE MoU - Volunteer teacher project**. (Maths, Science IT teachers and subject specialists.)
 | * ICT resources procured by the Korean Government (60 laptops) were provided delivered to school in Mamelodi.
* Following positive assessment of the first six teacher’s performance in 2017, a further seven were due to be despatched to serve in Teacher’s Centre in Queenstown and rural schools in the Eastern Cape in 2018.

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