

**NATIONAL ASSEMBLY**

**ORAL REPLY**

**QUESTION 446.**

**DATE OF PUBLICATION OF INTERNAL QUESTION PAPER: 29/08/2023**

**INTERNAL QUESTION PAPER: 26/2023**

**446. . Ms L S Chikunga (ANC) to ask the Minister of Basic Education: to ask the Minister of Basic Education:**

What are the (a) details of the progress of the robotics and coding pilot programme and (b) plans of her department beyond the pilot programme?

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#### **Response**

**What are the (a) details of the progress of the Robotics and Coding pilot programme and (b) plans of her department beyond the pilot programme?**

#### **(a) On progress of Coding and Robotics pilot programme**

The Department of Basic Education (DBE) is piloting Coding and Robotics in 1770 School Nationally started since 2021. A total of 1770 public schools are selected by Provincial Education Departments and are piloting coding and robotics in the Basic Education Sector. The breakdown of the schools is as follows 200 schools in Grades R – 6, additional 1000 schools in Grade 7 and 570 in Grades 8 – 9. The pilot is currently driven by a Draft Coding and Robotics Curriculum that is provided to all the all these schools.

The pilot is progressing steadily in all grades since the inception of the subjects. Furthermore, the Basic Education Sector in partnership with UNISA has provided Grade R - 3 educators with Coding and Robotics training using the MOOC digital platform. This training has mainly been conducted online to reach the educators nationally. Furthermore, all teachers involved in the pilot for grades 4 - 9 have been orientated. Teachers in the foundation Phase have been training Teachers in the intermediate phase as well as the senior phase have been orientated. Frequent workshops are conducted in provinces to further capacitate educators. Teachers are also encouraged to visit the UNISA MOOCS Online Platform every Friday from 15:00 until 16:00 for further support. The department is steadily increasing its capacity as the officials in all provinces have been orientated.

The Draft Curriculum dictates provide schools with all teaching and learning activities for Coding and Robotics that should be done on a daily basis in every piloting school and also suggests the resources that are needed to teach the subject. All the piloting schools have also been supplied with lesson plans to guide the teaching and learning. Provincial Departments have procured and supplied piloting schools with Coding and Robotics resources through the MST Conditional Grant. These resources consist of electronic devices such as tablets and Robotics kits. Availability of these resources and lack of sufficient resources have a huge impact in the meaningful delivery inside the classroom. The costs of these resources is also a huge factor and thus schools are not sufficiently resourced.

The introduction of Coding and Robotics has also given birth to numerous coding clubs being established in all the provinces where teachers and learners are actively involved in provincial expo, coding camps and competition. This in turn has created

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an opportunity to the NGOs, DBE partners and service providers to invest in the program and offer resources and workshops to schools. It should be further noted that national collaboration has been forged with the State Information Technology Agency (SITA) to make a National Robotics challenge possible where learners will be exposed through the challenge to create robots that are built to solve every day regional and national problems. Through this challenge in 2022 three schools received prizes worth 2 million rand to procure coding and robotics.

Boot Camps were organised targeting learners in the piloting Secondary Schools. Boot camps offer intensive and immersive learning experiences that empower participants with practical skills in these cutting-edge fields. These programs typically condense a comprehensive curriculum into a short timeframe, focusing on hands-on activities, real-world projects, and collaboration. Through a mix of theoretical learning and practical application, boot camps provide a dynamic learning environment that fosters creativity, problem-solving, and critical thinking. By the end of the program, learners and educators emerge with the ability to code and design robots and are equipped with valuable skills that align with the demands of the modern digital landscape.

Schools are keen to implement the pilot but timetabling is another problem as the subject is not formally recognised in the notional time, yet some schools made extraordinary means to ensure that Coding and Robotics is taught after hours. In addition, some schools have used some time allocated to other subjects to do the pilot subject and other schools have integrated teaching of Coding and Robotics in other subjects.

#### **(b) Plans of her department beyond the pilot programme?**

The current utilisation of the Draft Coding and Robotics Curriculum is underway, and the Department of Basic Education (DBE) has actively progressed towards its finalisation. This process has been influenced by the guidance provided by UMALUSI, aimed at enhancing the curriculum's robustness, as well as incorporating feedback from the public. In the months of June and August 2023, the DBE took significant steps in refining the curriculum and subsequently submitted the enhanced version to UMALUSI for approval. The DBE awaits response from UMALUSI on the curriculum that has been submitted.

The approval of Coding and Robotics Curriculum will guide the steps towards full implementation of the curriculum. The following steps are to be taken:

- Promulgation of policy by the Minister of Education.
- Alert all provinces through all DBE Forums on the new curriculum.
- Orientation of Officials responsible for managing Coding and Robotics.

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- Training of all teachers.
- Incremental implementation of coding and Robotics starting from foundation phase in the first year and the other grades/phase in the following years resourcing of schools.
- Monitor and support implementation of the curriculum.

It should be noted that as part of the Social Obligations all the schools will be provided with Internet connectivity to enable learners and educators to access Coding and Robotics resources. Lastly, all the educational websites that are offering Coding and Robotics resources free of charge will also be zero-rated.