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| MEMORANDUM FROM THE PARLIAMENTARY OFFICE |

**NATIONAL ASSEMBLY**

**FOR WRITTEN REPLY**

**QUESTION 3202**

**DATE OF PUBLICATION OF INTERNAL QUESTION PAPER: 16/09/2022**

**INTERNAL QUESTION PAPER NO 33 OF 2022**

**Mr S S Zondo (IFP) to ask the Minister of Higher Education, Science and Innovation:**

In view of Africa being regarded as contributing about 1% of global knowledge, which further marginalises the continent as a producer of knowledge, what are the (a) relevant details of any improved measures that his department has actioned and/or implemented to ensure that the Republic’s universities and students contribute to the production of global knowledge to close the gap and (b) strides that his department has made thus far to ensure that higher education institutions around the Republic are keeping up to world standards in light of the FourthIndustrial Revolution?

**NW3924E**

**REPLY:**

(a) The Department of Higher Education and Training (DHET) implements two policies that are directly geared towards bolstering knowledge productivity in higher education institutions. The first policy is the *Research Outputs Policy (2015*) which provides a framework for the evaluation and subsidy allocation for research outputs produced by South African universities. The second policy is the *Policy on the* *Evaluation of Creative Outputs and Innovations produced by South African Higher Education Institutions (201*7).

Over and above the two policies, there are various initiatives under the umbrella programme we call the University Capacity Development Programme (UCDP) which also incentivises capacity development initiatives of academics at all our universities. The policy recognizes quality creative outputs in the subfields of Fine Arts; Visual Arts; Music; Theatre; Performance and Dance; Design; Film and Television and Literary Arts. Under innovation the policy recognizes Patents and Plant Breeders’ Rights.

Since the implementation of the policy from 2005, South African universities recorded notable growth in the number of research publications produced by academics in the sector. Table 1 below attests to the steady growth of research outputs, from 7 230 units in 2005 to 21 734.4 units in 2020.

The growth of research outputs from the universities has also impacted positively on the growth of academics with doctoral degrees as shown in Table 2 below.

Several independent studies have shown that the policies of the Department and the UCDP have increased research productivity and the number of doctoral graduates from South African universities. The graphs in Table 1 and 2, confirm that research productivity is on the rise in South African universities.

***Table 1: Total Publications Units awarded, 2005 - 2020***

**7230**

**8002.74**

**7750.96**

**8353.36**

**9109.34**

**9747.8**

**11191**

**12363.81**

**14008.67**

**15316.86**

**16320.76**

**18207.5**

**18872.3**

**19098.7**

**21019.7**

**21734.3**

**0**

**5000**

**10000**

**15000**

**20000**

**25000**

**2005**

**2006**

**2007**

**2008**

**2009**

**2010**

**2011**

**2012**

**2013**

**2014**

**2015**

**2016**

**2017**

**2018**

**2019**

**2020**

***Graph 2: Trend in proportions of academic staff with doctorates: 2005 - 2020***

**29.9**

**%**

**%**

**31.9**

**%**

**32.4**

**33.4**

**%**

**%**

**34.3**

**%**

**35.7**

**37.5**

**%**

**38.7**

**%**

**%**

**41.1**

**42.9**

**%**

**43.8**

**%**

**%**

**44.8**

**%**

**46.0**

**48.5**

**%**

**%**

**47.7**

**%**

**49.6**

**%**

**0**

**10**

**%**

**20**

**%**

**30**

**%**

**40**

**%**

**%**

**50**

**%**

**60**

**2005**

**2006**

**2007**

**2008**

**2009**

**2010**

**2011**

**2012**

**2013**

**2014**

**2015**

**2016**

**2017**

**2018**

**2019**

**2020**

**Year**

**% Academics with Doctorate**

(b) What are the strides the Department has made thus far to ensure that higher education institutions around the Republic are keeping up to world standards in light of the Fourth Industrial Revolution?

The *Ministerial Task Team on the 4th industrial Revolution* established in 2019 sought to investigate and advise the Minister on how the Post-School Education and Training (PSET) system should take up opportunities presented by the Fourth Industrial Revolution (4IR). The *Report of the Ministerial Task Team on the Implications of the Fourth Industrial Revolution for Post-School Education and Training* was presented to the Minister of Higher Education, Science and Innovation on 18 September 2020. Since the Report’s release in 2021, the Department and the Department of Science and Innovation (DSI) are developing an Implementation Plan of its recommendations. Progress on implementation was reported to the Social Protection, Community and Human Development (SPCHD) Cluster on 17 August 2022. We have recorded several partnerships and progress by universities, colleges and Sector Education and Training Authorities (SETAs) in advancing 4IR interventions within the PSET Sector.

Various initiatives are taking place in all the four sub-sectors of the Post-School Education and Training (PSET) system, and they are captured in a database that has been developed by the Department. These include initiatives that (a) contribute to the 4IR (research, development and innovation); (b) provide/produce skills that are in line with the needs of the 4IR (building capacity for functioning in the 4IR); and (c) embrace the affordances of the 4IR in the PSET system, how it is managed, administered, equipped, teaching and learning taking place and how assessment is being done (impact of the 4IR on PSET).

Universities, TVET and CET colleges, through already established structures and partnerships are resourced and capacitated in the implementation of 4IR initiatives. The Department is actively supporting institutions, for example, it has, through an EDTP SETA partnership, established 4IR Centres of Excellence in 10 TVET colleges and, through a partnership with Intel, initiated the establishment of a series Artificial Intelligence (AI) Labs. The first was established at Orbit College where 20 mentors were trained to implement AI

Curriculum in the college. In collaboration with the MICT SETA, TVET College Curriculum

was developed in 4IR Technologies and an 4IR Learning Factory was established in collaboration with the Council for Scientific and Industrial Research (CSIR), to name a few.

An Inter-Departmental Committee for the 4IR in PSET (4IRIDC) was established in 2021 to coordinate the Department’s efforts in the 4IR; to drive the implementation of the recommendations of the Report; and to monitor its implementation. The 4IRIDC is finalising a Framework for 4IR Implementation in the PSET that will further guide and support PSET institutions in implementation and provide a tool to monitor implementation.