



# higher education & training

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Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

## **REPORT ON THE EVALUATION OF THE 2012 UNIVERSITIES' RESEARCH PUBLICATION OUTPUTS**

**FEBRUARY 2014**

Evaluated in terms of the *Policy and Procedures for the Measurement of  
Research Output of Public Higher Education Institutions (2003)*

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## Table of Contents

1.	Introduction.....	6
2.	Process and Procedures.....	7
3.	Overall research publication output units.....	9
4.	Journal publication output units.....	11
4.1	Journal publication output units by Classification of Education Subject Matter (CESM) category.....	14
4.2	Journal publication output units by broad field of study.....	15
5.	Book publication output units.....	16
5.1	Book publication output units by Classification of Education Subject Matter (CESM) category.....	18
6.	Published conference proceeding output units.....	19
6.1	Conference proceeding output units by Classification of Education Subject Matter (CESM) category.....	22
7.	Overall research publication and weighted output units.....	24
7.1	Overall publication output units by Classification of Education Subject Matter (CESM) category.....	26
7.2	Overall publication output units by broad field of study.....	31
7.3	Overall publication output units by institution and institutional type.....	32
8.	General observation and conclusions.....	39

## List of Figures

Figure 1:	Journal output by index, 2012.....	12
Figure 2:	Journal output by broad Field, 2012.....	15
Figure 3:	Book publications by broad Field, 2012.....	19
Figure 4:	Outputs in conference proceedings by institutional type, 2012.....	21
Figure 5:	Conference outputs by broad field, 2012.....	23
Figure 6:	Total research output in journals, books and conference proceedings, 2008-2012.....	25
Figure 7:	Proportion of research publications outputs units by type of publication, 2008 – 2012.....	26
Figure 8:	Total output by Classification of Education Subject Matter (CESM) Category.....	29
Figure 9:	Total publications by broad field.....	31
Figure 10:	Total output by broad field, by type of publication.....	32
Figure 11:	Share of total research publications output by institutional type, 2008 – 2012.....	36

## List of Tables

Table 1:	Publication research output units per institution, 2012.....	10
Table 2:	Journal publications outputs by approved index, 2012 and 2011.....	13
Table 3:	Journal publication output units by CESM category, 2012.....	14
Table 4:	Reasons for the non-recognition of book publication units, 2012.....	16
Table 5:	Percentage of book publication output units per institution, 2012.....	17
Table 6:	Book publications by CESM categories, 2012.....	18
Table 7:	Units in conference proceedings per institution for 2012.....	20
Table 8:	Reasons for the non-recognition of conference proceedings, 2012.....	21
Table 9:	Conference proceeding outputs units by CESM category in 2012.....	22
Table 10:	List of South African accredited conferences.....	24
Table 11:	Total publications research output in highest output CESM categories (6% and above of publications output).....	27
Table 12:	Total publications research output in middle output CESM categories (between 1.5% and 5.9% output).....	28
Table 13:	Total publications research output in low output CESM categories (below 1.5%).....	28
Table 14:	Per capita output of research/instructional staff per CESM category (as per HEMIS data).....	30
Table 15:	Percentage of total output by institution (2008-2012), (grouped by volume of output into highest, medium and lowest percentage of output) .....	33
Table 16:	Per capita research publication output units, 2008-2012.....	35
Table 17:	Weighted research per capita output according to the norms.....	37
Table 18:	Permanently employed academics by qualifications, 2012.....	38

## 1. Introduction

In terms of the *Policy and Procedures for the Measurement of Research Output of Public Higher Education Institutions (2003)*, all public Higher Education Institutions (HEIs) must annually submit their subsidy funding claims for research outputs, in the form of publications, to the Department of Higher Education and Training (DHET). The DHET allocates research subsidy based on unit calculations for approved publications. The policy aims to “encourage research productivity by rewarding quality research output at public higher education institutions”. It hopes to “enhance productivity by recognising the major types of research output produced by higher education institutions and further use appropriate proxies to determine the quality of such output”.

The policy defines research as “original, systematic investigation undertaken in order to gain new knowledge and understanding”. The policy indicates specific textual outputs for subsidy and that publications should “disseminate original research and new developments within specific disciplines, sub-disciplines or fields of study”. According to the policy, the target audience for all publications must be specialists in the specific field. This includes academic peers, but not normally students or practitioners. As stated before and in the policy, the Department is aware of other forms of research that take place at public institutions of higher learning and that the criteria for recognition of outputs for subsidy purposes are not necessarily indicators of value or quality of the research that is undertaken at public institutions. Among other forms of research, which are not recognised for subsidy purposes, are creative outputs, artefacts, patents, textbooks and articles in non-accredited journals. In this regard, institutional policies should take cognisance of such outputs and encourage growth in the types of research that is aligned with the institution’s missions and vision. All institutions must have a relevant (to the mission, potential and environment of the institution) Research Policy identifying the institution’s focus areas and development needs. Strategies for attaining development targets must also be developed.

It is against the above background that this report presents an analysis of the processes, procedures and outcomes of the research publication outputs for 2012 (assessed in 2013). Late publications for the year 2011 (n-2) were also considered where valid and legitimate reasons for late submission were provided and accepted, but submissions dating before 2011 (n-3 and beyond) were not considered, as per the Policy. As such, this report contains analysis of the number of units awarded to institutions for subsidy-earning research outputs in accredited journals, books, and published conference proceedings.

Universities receive research subsidy for weighted research outputs. Weighted research output is calculated on the basis of set norms (targets) per permanently-employed academic/researcher at each institution and includes subsidy units for research Masters and Doctoral graduate outputs. This report largely focuses on accredited research publications and states specifically those instances where Masters and Doctoral graduates are included in the analysis.

## **2. Process and Procedures**

The Directorate: University Policy and Development Support administered the process and evaluated technical compliance of all submissions received in May 2013. The Directorate identified additional information required in order to improve the quality of the submissions. Submissions that did not meet the requirements as set out in the policy were returned to respective institutions before the sitting of the Department's Research Outputs Evaluation Panel. The main reason for submissions being returned to institutions was the incorrect year of publication. For example, some book publications had a 2013 publication date, yet 2012 (n-1) publications are evaluated in 2013 in accordance with the Policy. Other incorrect year-of-publication submissions, which were also returned, were those dated any year before 2011 (n-2+), i.e. beyond the maximum allowable year of publication (year n-2).

In order to reduce mistakes and incorrect submissions, institutions are urged to ensure that all research office personnel are well acquainted with the Policy and that an

institutional panel sits to assess all publications before submitting to the Department. Only claims, which meet the policy requirements, should be submitted. Letters motivating the submission of other claims should be avoided.

Once all the information was captured and screened, the Department's internal Research Outputs Evaluation panel assessed submissions against the technical requirements of the Policy. On the 1<sup>st</sup> and 2<sup>nd</sup> of August 2013, the Research Outputs Evaluation Panel met to evaluate research outputs in the form of book publications and published conference proceedings. The meeting was chaired by Dr Prins Nevhutalu, who was the Deputy Vice-Chancellor: Academic, University of Zululand at that time. Other members of the Panel were:

Prof Ramesh Bharuthram	DVR: Research, University of the Western Cape
Prof Peter Clayton	DVC: Research & Development, Rhodes University
Prof Robin Crewe	Vice-Principal: Faculties, University of Pretoria
Dr Andrew Kaniki	Executive Director: KMS, NRF
Prof Tshilidzi Marwala	DVC: Research, University of Johannesburg
Prof Angina Parekh	DVC: Academic, University of Johannesburg
Prof Cheryl Potgieter	DVC: Humanities, University of KwaZulu-Natal
Prof Rob Midgley	DVC: Research and Innovation, University of Zululand

The Directorate: University Policy and Development Support provided the necessary administrative support, such as recording the decisions of the Panel and calculating the number of units allocated to each institution for publications in scholarly books and approved published conference proceedings. The Directorate also verified audited claims for publications in accredited journals submitted by the universities, and calculated the final unit allocations for each institution.

The Directorate observed that the quality of spread sheets and information submitted has improved from previous years particularly at those institutions making use of well-



developed and customised software for this purpose. This suggests that the data management systems are assisting institutions with their research outputs.

### **3. Overall Research Publication Output Units**

The total approved research outputs for 2012 (published in accredited journals, books and conference proceedings) amounted to 12 363.81 units. This is an increase of 1 172.81 units from 2011 (10.5% growth) and 2 616.01 from 2010 (26.84% growth). See Table 1 for the breakdown per institution. Journal articles increased from 9 890.86 in 2011 to 11 035.72 in 2012 (11.6% growth), while books increased from 412.51 to 580.8 (41% growth). Conference proceedings, on the other hand, decreased from 873.63 in 2011 to 747.29 in 2012 (-14.5% decline).

A list of all the institutions with their respective research publications outputs for 2012 is presented below in Table 1. Institutions have been listed according to their volume of publications output units, the top having the highest number of units, while the bottom has the lowest.

**Table 1: Publication Research Output Units per Institution, 2012.**

Institutions	Book Publications		Published Conference Proceedings		Publications in Journals		Total Units in 2012	% of Overall Sector Total
	Actual Units	% of total publications	Actual Units	% of total publications	Actual Units	% of total publications		
UKZN	64.63	4.5%	34.47	2.4%	1325.12	93.1%	1424.22	11.5%
UP	72.48	5.1%	74.28	5.2%	1277.35	89.7%	1424.11	11.5%
UCT	93.44	6.7%	106.12	7.6%	1191.33	85.7%	1390.89	11.2%
SU	91.56	6.9%	73.06	5.5%	1158.68	87.6%	1323.3	10.7%
WITS	54.13	4.9%	49.35	4.4%	1010.98	90.7%	1114.46	9.0%
UNISA	32.45	3.6%	47.64	5.3%	812.43	91.0%	892.52	7.2%
UJ	31.36	3.6%	103.91	11.9%	738.64	84.5%	873.91	7.1%
NWU	28.51	3.3%	50.08	5.8%	790.6	91.0%	869.19	7.0%
UFS	49.58	7.7%	28.28	4.4%	566.07	87.9%	643.93	5.2%
RU	35.46	8.7%	23.87	5.8%	350.6	85.5%	409.93	3.3%
UWC	12.44	3.4%	11.64	3.2%	342.8	93.4%	366.88	3.0%
NMMU	4.22	1.4%	38.79	12.5%	268.52	86.2%	311.53	2.5%
TUT	0.26	0.1%	39.83	17.3%	189.8	82.6%	229.89	1.9%
UL	0.37	0.2%	0.67	0.3%	218.19	99.5%	219.23	1.8%
UFH	2.24	1.1%	4.5	2.2%	201.83	96.8%	208.57	1.7%
CPUT	0.1	0.1%	20.29	12.1%	147.12	87.8%	167.51	1.4%
UV	7.1	5.6%	7.87	6.2%	112.88	88.3%	127.85	1.0%
DUT	0.47	0.6%	12.2	15.2%	67.77	84.2%	80.44	0.7%
VUT	0	0.0%	8.71	11.6%	66.59	88.4%	75.3	0.6%
UZ	0	0.0%	3.13	4.3%	69.78	95.7%	72.91	0.6%
WSU	0	0.0%	3	4.9%	57.62	95.1%	60.62	0.5%
CUT	0	0.0%	4.6	7.8%	54.33	92.2%	58.93	0.5%
MUT	0	0.0%	1	5.7%	16.69	94.3%	17.69	0.1%
<b>Grand Total</b>	<b>580.8</b>	<b>4.7%</b>	<b>747.29</b>	<b>6.0%</b>	<b>11035.72</b>	<b>89.3%</b>	<b>12363.81</b>	<b>100%</b>

As in previous years, journal publications were the largest contributor to the overall output, contributing 89%, followed by conference proceedings at 6% and 5% for book publications. The low percentage of academic book publications is a matter that is receiving attention. The Department is considering changing the policy so that the value of academic books is enhanced and, therefore, academics are encouraged to publish substantial numbers. (Also see Figure 6 for a graphical presentation of the total research output units).

#### **4. Journal Publication Output Units**

Journal publication output units increased from 9 890.86 units in 2011 to 11 035.72 units in 2012 (10.4% growth). This growth is less than the 15% growth observed from 2010 to 2011. As in previous years, in 2012 the majority of units across the system (89.3%) were accrued to publications in journals. All institutions accrued more than 82% of their units for publications in journals (see Table 1 and Figure 6).

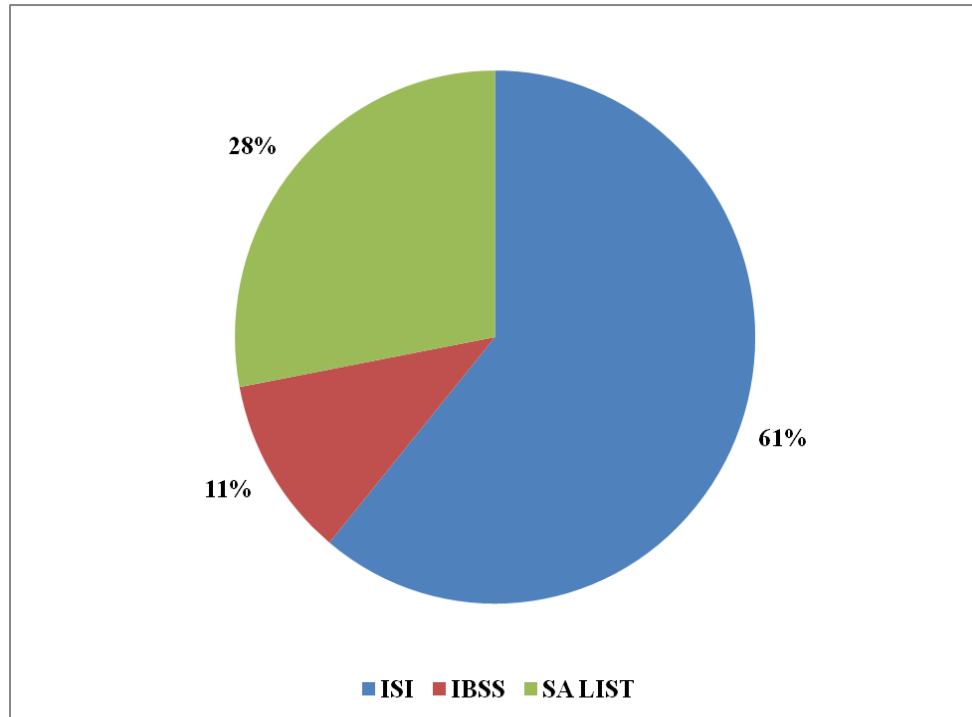
Possible reasons for a greater focus on journals than other publication types include the quick publication turnaround compared to books, the broad international exposure of the research and the lasting nature of this publication type compared to conference publications. Furthermore, the Policy incentives for journal articles include certainty regarding subsidy as long as the journal appears on accredited indices. The focus on Journals is understandable in this context, however, the sector should be concerned that book publications are undervalued, and in future incentives may have to be provided to ensure the preservation of the value of book publications.

Publications in Journals listed on the approved international indices, which are Thomson Reuters ISI Web of Science Indices and the ProQuest IBSS index, remain high, at 61% and 11%, respectively (see Figure 1). The overall proportion of publications in Journals listed on the two international indices has substantially increased from 57% in 2007 to 72% in 2012. It should be noted that some South African Journals are on the international indices, which is an indicator that the system is developing towards international quality standards. This is seen as a positive development as South African academics are becoming more internationally exposed. Table 2 shows the breakdown of journal publications across the different indices per institution for 2012 and 2011.

It is worth noting that only two universities (UNISA and VUT) have a greater proportion of publications published in Journals on the South African DHET approved list, than on the international indices. All historically disadvantaged institutions have more than 50%

of their publications in approved international journals. This is encouraging and highlights the existence of research potential among these institutions.

**Figure 1:** Journal output by index, 2012



**Table 2: Journal Publications Outputs by Approved Index, 2012 and 2011**

Institution	2012 Journal Articles						2011 Journal Articles					
	ISI	IBSS	Total International	% International	SA Journal list	Total journal outputs	ISI	IBSS	Total International	% International	SA Journals list	Total journal outputs
<b>UKZN</b>	862.55	128.18	990.73	75%	338.39	<b>1325.12</b>	727.28	111.77	839.05	73%	312.97	<b>1152.02</b>
<b>UP</b>	813.77	115.08	928.85	73%	348.50	<b>1277.35</b>	804.26	100.25	904.51	77%	274.10	<b>1178.61</b>
<b>UCT</b>	930.97	107.88	1038.85	87%	152.48	<b>1191.33</b>	849.21	129.46	978.67	87%	145.37	<b>1124.04</b>
<b>SU</b>	799.12	64	863.12	74%	295.56	<b>1158.68</b>	702.79	47.88	750.67	72%	297.39	<b>1048.06</b>
<b>Wits</b>	759.55	90.72	850.27	84%	160.71	<b>1010.98</b>	674.92	74.96	749.88	84%	147.95	<b>897.83</b>
<b>UNISA</b>	99.29	160.27	259.56	32%	552.87	<b>812.43</b>	100.06	86.73	186.79	25%	545.84	<b>732.63</b>
<b>NWU</b>	434.21	86.42	520.63	66%	269.97	<b>790.60</b>	329.50	84.45	413.95	63%	238.68	<b>652.63</b>
<b>UJ</b>	429.36	107.54	536.90	73%	201.74	<b>738.64</b>	349.17	73.57	422.74	66%	215.25	<b>637.99</b>
<b>UFS</b>	332.02	42.5	374.52	66%	191.55	<b>566.07</b>	280.00	42.28	322.28	63%	189.46	<b>511.74</b>
<b>RU</b>	285.20	23.00	308.20	88%	42.40	<b>350.60</b>	265.70	13.70	279.40	90%	29.87	<b>309.27</b>
<b>UWC</b>	165.97	63.14	229.11	67%	113.69	<b>342.8</b>	145.14	49.75	194.89	59%	135.17	<b>330.06</b>
<b>NMMU</b>	157.80	22.13	179.93	67%	88.59	<b>268.52</b>	166.85	22.17	189.02	67%	94.50	<b>283.52</b>
<b>UL</b>	126.75	29.08	155.83	71%	62.36	<b>218.19</b>	71.94	8.67	80.61	56%	62.54	<b>143.15</b>
<b>UFH</b>	137.98	25.5	163.48	81%	38.35	<b>201.83</b>	119.34	23.50	142.84	85%	25.33	<b>168.17</b>
<b>TUT</b>	120.96	13.13	134.09	71%	55.71	<b>189.80</b>	125.73	7.00	132.73	74%	46.33	<b>179.06</b>
<b>CPUT</b>	109.79	1.00	110.79	75%	36.33	<b>147.12</b>	82.79	7.25	90.04	78%	25.50	<b>115.54</b>
<b>UV</b>	49.20	18.18	67.38	60%	45.50	<b>112.88</b>	53.75	4.50	58.25	51%	55.66	<b>113.91</b>
<b>UZ</b>	43.83	0.5	44.33	64%	25.45	<b>69.78</b>	42.40	0.00	42.40	63%	25.43	<b>67.83</b>
<b>DUT</b>	44.02	9.00	53.02	78%	14.75	<b>67.77</b>	54.54	7.50	62.04	84%	12.22	<b>74.26</b>
<b>VUT</b>	23.57	0.5	24.07	36%	42.52	<b>66.59</b>	28.67	1.00	29.67	46%	34.47	<b>64.14</b>
<b>WSU</b>	26.32	23.63	49.95	87%	7.67	<b>57.62</b>	37.14	3.00	40.14	94%	2.41	<b>42.55</b>
<b>CUT</b>	11.27	18.74	30.01	55%	24.32	<b>54.33</b>	7.93	11.28	19.21	48%	20.90	<b>40.11</b>
<b>MUT</b>	12.36	4.00	16.36	98%	0.33	<b>16.69</b>	18.91	3.00	21.91	92%	1.83	<b>23.74</b>
<b>TOTAL</b>	<b>6775.86</b>	<b>1154.12</b>	<b>7929.98</b>	<b>72%</b>	<b>3109.74</b>	<b>11035.72</b>	<b>6039.12</b>	<b>913.67</b>	<b>6952.79</b>	<b>70%</b>	<b>2939.17</b>	<b>9890.86</b>

#### 4.1. Journal publication output units by Classification of Education Subject Matter (CESM) category

Table 3 shows the journal publication output units disaggregated by Classification of Educational Subject Matter (CESM) categories. The highest proportion of journal publications was in CESM 9 (Health Care & Health Sciences) with 16.9% of all journal publication output units in 2012. This is followed by CESM 13 (Life Sciences) with 10%, and CESM 14 (Physical Sciences) with 9.1% of all units. CESM categories 5, 2, 10, and 16 (at the bottom of Table 3) accrued less than 1% each of overall research publication output units. In analysing research output by CESM category, however, many factors must be considered, including the size of the academic field with respect to: the proportion of academics working in the field compared to other fields; the student enrolment especially up to the most senior post graduate qualification; and the tradition of the field with regard to publication.

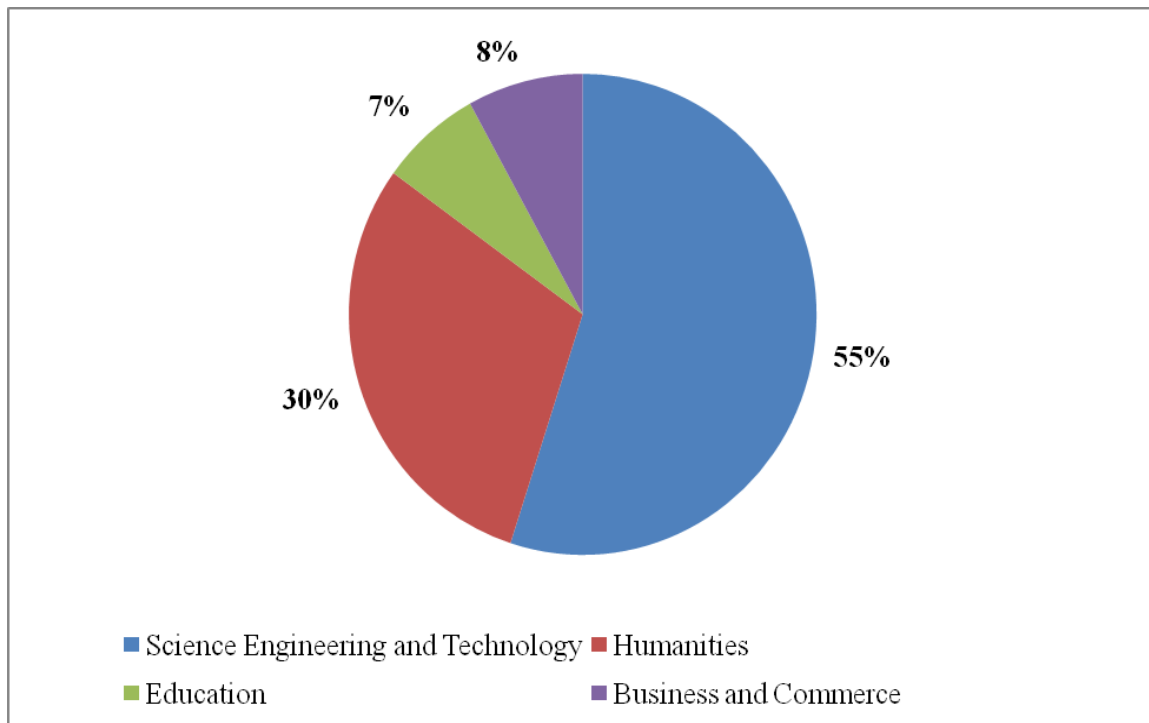
**Table 3:** Journal publication output units by CESM Category, 2012

CESM category	Number of Units	% of Total
09: Health profession and related clinical sciences	1862.35	16.9%
13: Life Sciences	1108.53	10.0%
14: Physical Sciences	1005.51	9.1%
01: Agriculture, agricultural operations and related sciences	937.34	8.5%
04: Business, Economics and Management Studies	910.33	8.2%
20: Social Science	861.60	7.8%
07: Education	714.82	6.5%
17: Philosophy, religion and Theology	655.38	5.9%
12: Law	642.45	5.8%
08: Engineering	598.50	5.4%
11: Languages, Linguistics and Literature	469.41	4.3%
15: Mathematics and Statistics	398.22	3.6%
18: Psychology	243.80	2.2%
19: Public Management and Services	156.62	1.4%
03: Visual and performing Arts	140.83	1.3%
06: Computer and Information Sciences	112.65	1.0%
05: Communication, journalism and related studies	87.47	0.8%
02: Architecture and building environment	81.10	0.7%
10: Family ecology and consumer sciences	28.36	0.3%
16: Military Sciences	24.45	0.2%
<b>TOTAL</b>	<b>11035.72</b>	<b>100%</b>

#### 4.2. Journal Publication Output Units by Broad Field of Study

The distribution of journal publications by broad fields has been consistent in the past few years, with over half (55%) of the units in the Science, Engineering and Technology (SET); followed by Humanities with 30%; Business and Commerce with 8%; and Education with 7% (see Figure 2).

**Figure 2:** Journal Output by Broad Field, 2012.



**Note:** The CESM categories in each broad field are:

**Science, Engineering and Technology** = CESM categories 1, 6, 8, 9, 10, 13, 14, 15 and 16;

**Humanities** = CESM categories 2, 3, 5, 11, 12, 17, 18, 19, and 2;

**Education** = CESM 7; and

**Business and Commerce** = CESM 4.

## 5. Book Publication Output Units

Research publications in scholarly books for 2012 amounted to 580.8 units, up from 412.51 units in 2011, representing a 41% growth in output between 2011 and 2012. Although this is a very high growth, book publications remain the least popular form of research output, accounting for only 4.7% of the overall output units.

A total of 444.98 units (43% of all claimed book units) for book publications were not accepted/approved for various reasons, as listed in Table 4 below. The most common two reasons for the non-acceptance of books remain the same as in previous years: firstly book publications were found not to be scholarly (47.5% of the non-approved units) and; secondly, peer review evidence was either lacking, ambiguous or inadequate. In some instances, only proposals or abstracts were reviewed, or the review was done by the editor and not by independent specialists.

**Table 4:** Reasons for the non-recognition of book publication units, 2012

<b>Reason for Non-Approval</b>	<b>Units Not Approved</b>	<b>% of units Not Approved</b>
Not scholarly	211.43	47.5%
Inadequate peer review process	161.16	36.2%
Late submission without a valid motivation	22.91	5.1%
Textbook or handbook	17.96	4.0%
Republication	8.71	2.0%
2013 Publication	6.11	1.4%
Thesis/dissertation	5.52	1.2%
Affiliation (incorrect or unsubsidised)	4.64	1.0%
No translation to English	4.28	1.0%
2010 Publication (n-2+)	1.08	0.2%
Non-peer reviewed conference publication	0.95	0.2%
Non-accredited journal publication	0.23	0.1%
<b>Total</b>	<b>444.98</b>	<b>100%</b>

Most reasons for non-approval of book publications are technical, therefore, can be fixed by institutional research offices. However the main reason for non-approval is content related (not scholarly), which should be of concern to the sector as it relates to quality as set out by the Policy. While the sector needs to improve the quality of book publications, the



Department is also considering Policy aspects, which could assist in encouraging quality improvement, as well as procedures to assess research output in book publications.

Table 5 shows book publication output units and percentages accrued to each individual university. The University of Cape Town (UCT) accrued the highest proportion of book units (16.1% of the total) followed by Stellenbosch University (SU) (15.8%). The five highest producing institutions accounted for 64.8% of all book publications, 33.9% was produced by the next seven institutions, while the remaining eleven institutions only produced a very low 1.3%.

**Table 5:** Percentage of book publication output units per institution, 2012

<b>HEIs</b>	<b>Units</b>	<b>% of books</b>
UCT	93.44	16.1%
SU	91.56	15.8%
UP	72.48	12.5%
UKZN	64.63	11.1%
WITS	54.13	9.3%
UFS	49.58	8.5%
RU	35.46	6.1%
UNISA	32.45	5.6%
UJ	31.36	5.4%
NWU	28.51	4.9%
UWC	12.44	2.1%
UV	7.10	1.2%
NMMU	4.22	0.7%
UFH	2.24	0.4%
DUT	0.47	0.1%
UL	0.37	0.1%
TUT	0.26	0.0%
CPUT	0.10	0.0%
WSU	0.00	0.0%
CUT	0.00	0.0%
VUT	0.00	0.0%
UZ	0.00	0.0%
MUT	0.00	0.0%
<b>Sub-total</b>	<b>7.66</b>	<b>1.3%</b>

**5.1. Book Publication output units by Classification of Education Subject Matter (CESM) Category**

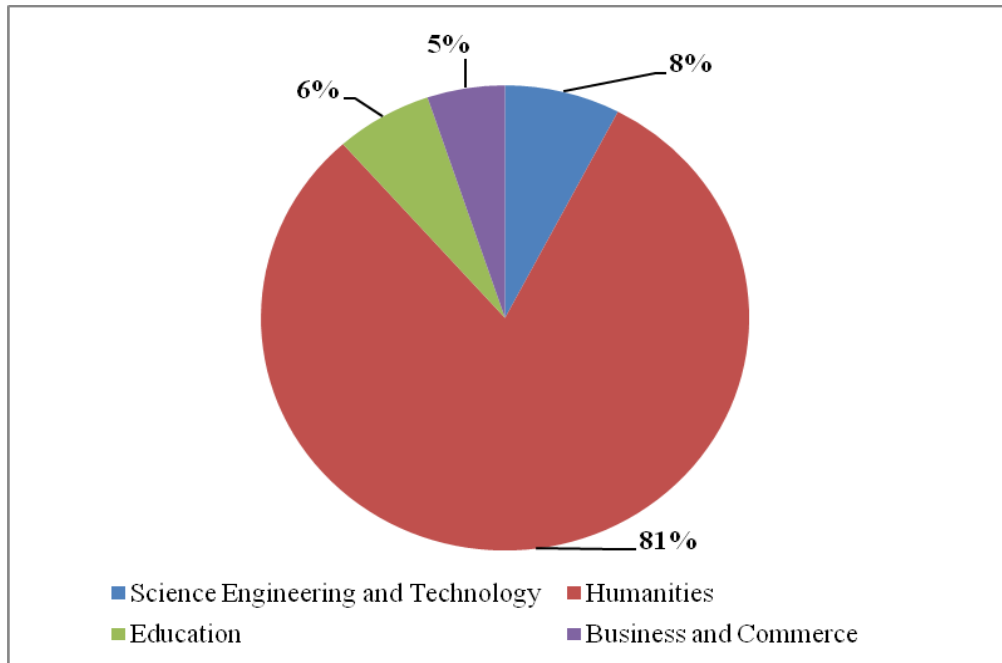
The highest number of units (over 5% of total) for book publications were accrued to each CESM category as follows: CESM 20 (Social Sciences) accounted for 29% of all approved book publications; CESM 12 (Law) 15.3%; CESM 11 (Language, Linguistics & Literature) 13.8%; CESM 17 (Philosophy, Religion & Theology) 13.5%; and CESM 7 (Education) 6.4%. See Table 6. CESM categories 6 and 15 (Computer and Information Sciences; and Mathematics and Statistics respectively) accounted for less than one unit each.

**Table 6:** Book Publications by CESM Categories, 2012

<b>Field (and CESM category)</b>	<b>Total units awarded</b>	<b>% of total book publication units</b>
20: Social Sciences	169.05	29%
12: Law	88.95	15.3%
11: Languages, Linguistics and Literature	80.06	13.8%
17: Philosophy, Religion and Theology	78.37	13.5%
07: Education	37.22	6.4%
04: Business, Economics and Management Studies	29.92	5.2%
03: Visual and Performing Arts	19.96	3.4%
13: Life Sciences	16.80	2.9%
05: Communication, Journalism and Related Studies	15.10	2.6%
09: Health Professions and Related Clinical Sciences	9.74	1.7%
19: Public Management and Services	8.33	1.4%
14: Physical Sciences	6.68	1.2%
02: Architecture and Built Environment	6.22	1.1%
08: Engineering	4.17	0.7%
01: Agriculture, Agricultural Operations & Related Sciences	3.54	0.6%
18: Psychology	3.21	0.6%
16: Military Sciences	2.47	0.4%
06: Computer and Information Sciences	0.60	0.1%
15: Mathematics and Statistics	0.41	0.1%
10: Family Ecology and Consumer Sciences	0.00	0.0%
<b>Total</b>	<b>580.80</b>	<b>100%</b>

Book publications in 2012 were highest in the Humanities (81%), followed by the SET (8%), Education (6%), and Business and Commerce (5%); see Figure 3.

**Figure 3:** Book publications by Broad Field, 2012



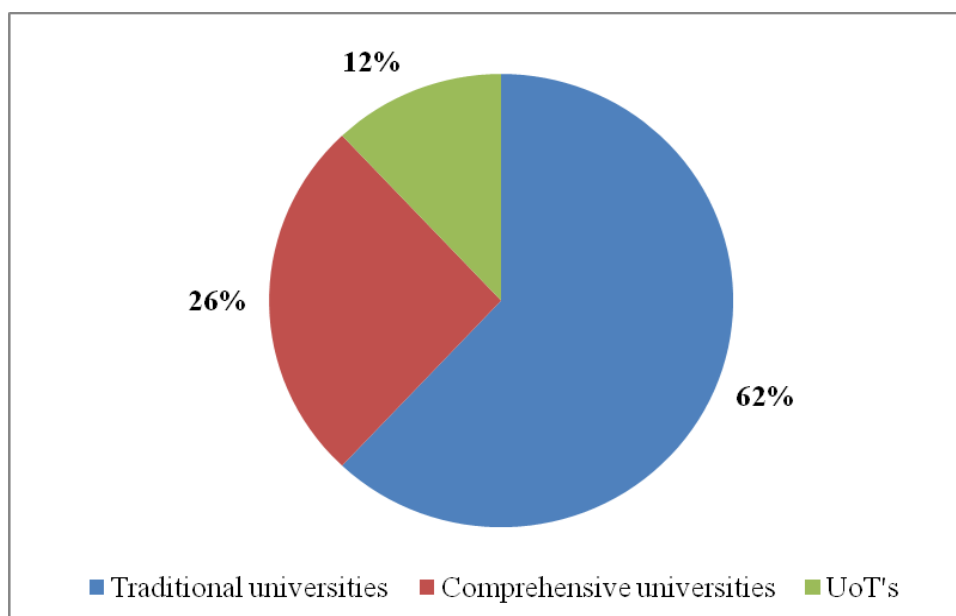
## 6. Published Conference Proceeding Output Units

Publications in conference proceedings accounted for 6% of the overall research publications outputs in 2012. They amounted to 747.29 units, down from 873.63 units in 2011. This represents a 14.5% decline in output between 2011 and 2012. Table 7 shows the number of conference publications units accrued to each university. The share of outputs in conference proceedings by institutional type is illustrated in Figure 4.

**Table 7:** Units in conference proceedings per Institution for 2012

<b>HEI</b>	<b>Units</b>	<b>% share of total conference proceedings units</b>
<b>UCT</b>	106.12	14.2%
<b>UJ</b>	103.91	14%
<b>UP</b>	74.28	10%
<b>SU</b>	73.06	10%
<b>NWU</b>	50.08	6.7%
<b>WITS</b>	49.35	6.6%
<b>UNISA</b>	47.64	6.4%
<b>TUT</b>	39.83	5.3%
<b>NMMU</b>	38.79	5.2%
<b>UKZN</b>	34.47	4.6%
<b>UFS</b>	28.28	3.8%
<b>RU</b>	23.87	3.2%
<b>CPUT</b>	20.29	2.7%
<b>DUT</b>	12.20	1.6%
<b>UWC</b>	11.64	1.6%
<b>VUT</b>	8.71	1.2%
<b>UV</b>	7.87	1.1%
<b>CUT</b>	4.60	0.6%
<b>UFH</b>	4.50	0.6%
<b>UZ</b>	3.13	0.4%
<b>WSU</b>	3.00	0.4%
<b>MUT</b>	1.00	0.1%
<b>UL</b>	0.67	0.1%
<b>Sub Total</b>	101.48	13.6%
<b>Total</b>	747.29	100%

**Figure 4:** Outputs in conference proceedings by institutional type, 2012



As in previous years, the highest number of non-approved or non-accepted published conference proceedings units was due to lack of evidence, ambiguous or inadequate proof of peer review. Of the 318.03 non-approved claimed units, 290.47 (91.3%) were due to inadequate peer review process (Table 8). All the reasons for the non-approval of conference proceedings are listed in Table 8.

**Table 8:** Reasons for the non-recognition of conference proceedings, 2012

Reason for Non-Approval	Units Not Approved	% of units Not Approved
Inadequate peer review process	290.47	91.3%
Not Scholarly	11.06	3.5%
Incomplete submission	7.19	2.3%
Poster, occasional paper, abstract etc.	4.19	1.3%
Republication	2	0.6%
Non-accredited journal publication	1.7	0.5%
Late submission without a valid motivation	1.42	0.4%
<b>Total</b>	<b>318.03</b>	<b>100%</b>

Unlike in book publications, the content or quality of published conference proceedings account for relatively low number of non-approved units. In the vast majority of cases, non-approval was due to an inadequate peer review process. This is a technical matter that could be corrected at institutional level. It may however also be due to differences in the interpretation of what is meant by 'peer reviewed' as described in the Policy and the

processes applied by conference organisers. However, over time this challenge could be resolved through implementing a list of accredited conference proceedings. The procedure the Department would use to evaluate approved conference proceedings would be similar to that used for journals. This would not preclude publications not on the list being submitted, but it would assist with ensuring quality standards for approved publications.

### **6.1. Conference Proceeding Output Units by Classification of Education Subject Matter (CESM) Category**

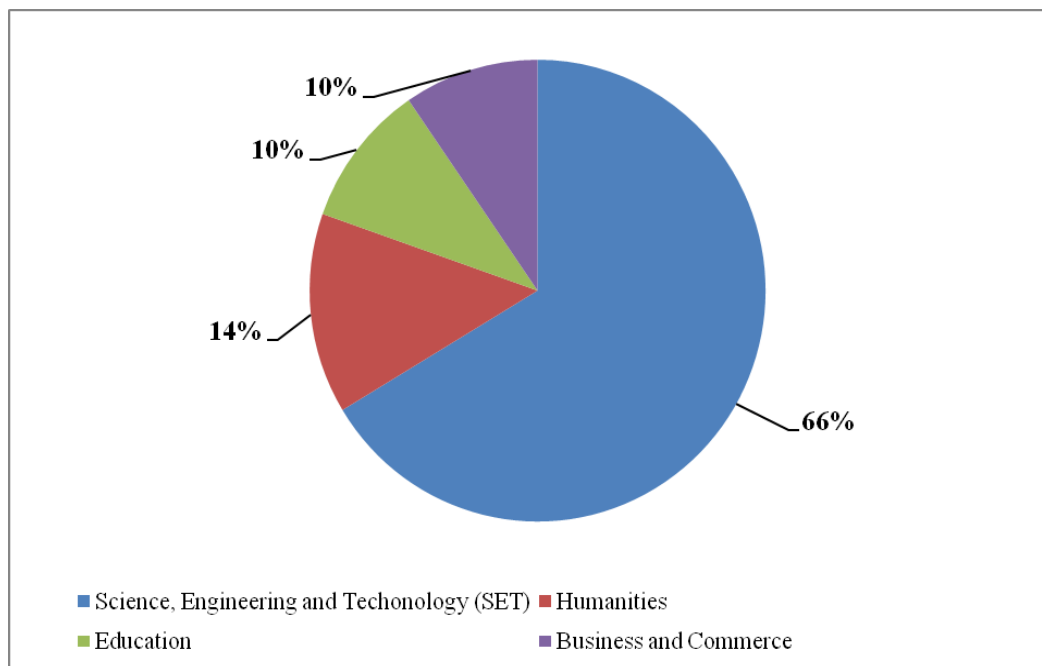
The majority of units for published conference proceedings (71.3%) were in Engineering at 38.9% (CESM 8); Computer & Information Sciences at 22.2% (CESM 6); and Education with 10.2% (CESM 7). Table 9 shows the number of units accrued to each CESM category and the percentage portion of each. There were no units awarded for conference proceedings in two CESM categories, CESM 10 and CESM 18 (Family Ecology and Consumer Sciences; and Psychology respectively).

**Table 9:** Conference Proceeding Output Units by CESM Category in 2012

<b>CESM category</b>	<b>Number of Units</b>	<b>% of Total</b>
08: Engineering	290.95	38.9%
06: Computer and Information Sciences	165.82	22.2%
07: Education	76.31	10.2%
04: Business, Economics and Management Studies	70.90	9.5%
02: Architecture and Built Environment	51.05	6.8%
20: Social Sciences	18.84	2.5%
14: Physical Sciences	16.03	2.1%
15: Mathematics and Statistics	13.89	1.9%
11: Languages, Linguistics and Literature	10.15	1.4%
17: Philosophy, Religion and Theology	10.00	1.3%
12: Law	4.42	0.6%
09: Health Professions and Related Clinical Sciences	4.17	0.6%
05: Communication, Journalism and Related Studies	3.94	0.5%
03: Visual and Performing Arts	3.50	0.5%
01: Agriculture, Agricultural Operations & Related Sciences	2.70	0.4%
13: Life Sciences	2.67	0.4%
19: Public Management and Services	1.45	0.2%
16: Military Sciences	0.50	0.1%
10: Family Ecology and Consumer Sciences	0.00	0.0%
18: Psychology	0.00	0.0%
<b>Total</b>	<b>747.29</b>	<b>100%</b>

As in previous years, the highest number of conference proceedings accrued to the SET field (66%), followed by Humanities (14%), while Education and Business and Commerce both accrued 10% of the total share (Figure 5).

**Figure 5:** Conference outputs by broad field, 2012



The Department has introduced a list of sixteen accredited conferences (Table 10). When institutions submit claims for subsidy against published conference proceedings they are requested to indicate whether the conference paper is published at any of these accredited conferences. Such papers would be treated in the same way as publications in accredited journals. Papers published in the conference proceedings that are not on the accredited list may still be submitted if they meet the criteria published in the Policy, and will be sent to the Panel for evaluation as it is the current process. The depart will, in future, establish a list of accredited international conferences.

**Table 10:** List of South African accredited conferences

No.	Conference name
1	IST-Africa Conference Proceedings: International Information Management Corporation (IIMC)
2	Proceedings of the Annual Meeting of the Southern African Association for Research in Mathematics, Science and Technology Education (SAARMSTE )
3	Proceedings of the Annual Symposium of the Pattern Recognition Association of South Africa (PRASA)
4	Proceedings of the Annual Conference Association of Researchers in Construction management (ARCOM)
5	Proceedings of the Annual Conference on World Wide Web Applications (WWW)
6	Proceedings of the Annual Congress of the Association for Mathematics Education of South Africa (AMESA)
7	Proceedings of the Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists (SAICSIT)
8	Proceedings of the Conference on the Domestic Use of Energy (DUE)
9	Proceedings of the Conference on the Industrial and Commercial Use of Energy (ICUE)
10	Proceedings of the Information Security for South Africa Conference (ISSA )
11	Proceedings of the Southern African Transport Conference (SATC)
12	Proceedings of the Southern African Universities' Power Engineering Conference (SAUPEC )
13	Southern Africa Telecommunication Networks and Applications Conference (SATNAC)
14	The Built Environment Conference
15	The South African Computer Lecturers' Association (SACLA)
16	The South African Council for the Quantity Surveying Profession (SACQSP) Conference

## 7. Overall Research Publication and Weighted Outputs Units

There has been an overall steady increase in research publication output units over the years since the inception of the current Policy in 2005. Figure 6 illustrates the contribution of the three publication types to this growth. Between 2008 and 2012, Journal publication output units have increased by 44.5%, which is an average increase of 11.1 % per annum. A slight



dip was, however, observed in 2007. During the same period (2008-2012), books and conference proceedings have had a marginal increase.

**Figure 6:** Total Research Output in Journals, Books and Conference Proceedings, 2008-2012.

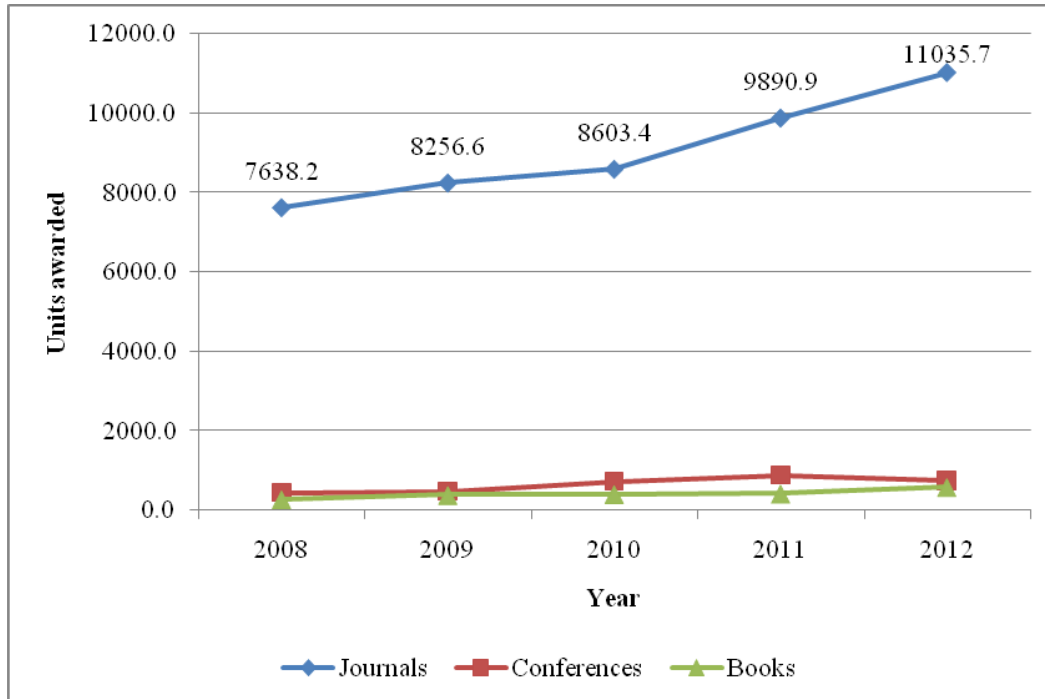
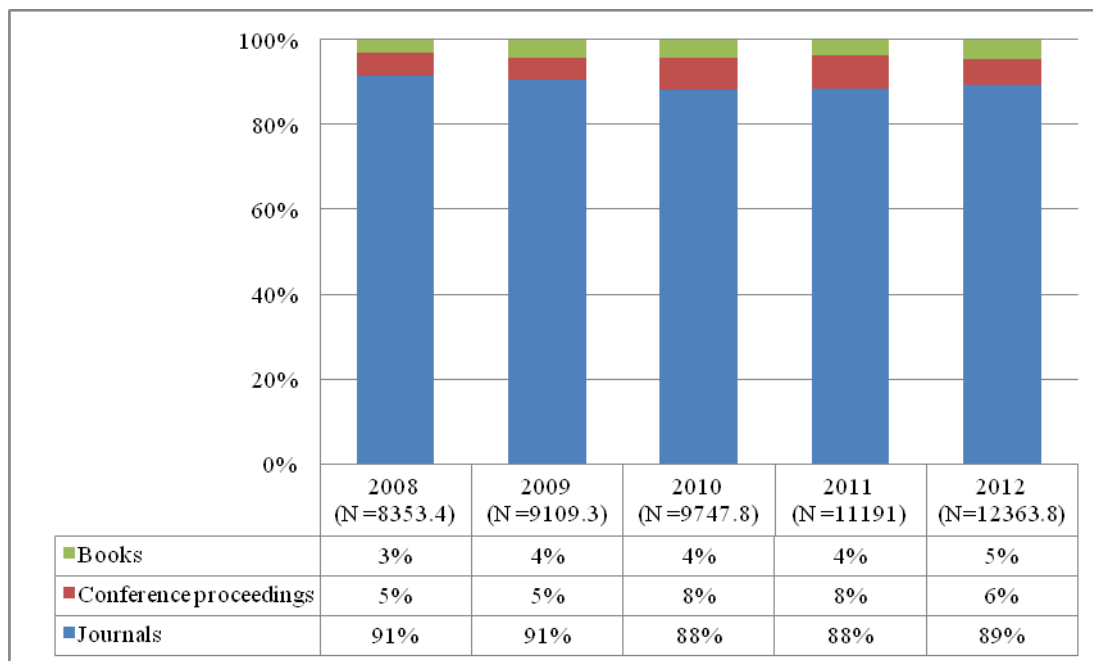


Figure 7 shows the proportional contribution of each publication type over the past five years. Despite the fact that a high percentage of claimed book publications units are not approved from year to year, there has been a significant growth in book publications outputs. The proportional contribution in the overall publication output units has only increased by 2%; from 3% in 2008 to 5% in 2012. In future, Policy will seek to add further impetus to the growth in book publication outputs while also restoring the value of books for disseminating research.

**Figure 7: Proportion of Research Publications Outputs Units by Type of Publication, 2008 – 2012**



### **7.1. Overall Publication Output Units by Classification of Education Subject Matter (CESM) Category**

An analysis of the Classification of Education Subject Matter (CESM) aggregated for all publication types (journals, books and proceedings), indicates the most productive research output subject areas in general and per institution. This information can assist individual institutions to focus their efforts in developing their niche or areas of potential. In analysing research outputs by CESM category, consideration should be given to the fact that research publications can be affected by different patterns of authorship; frequency of publications; the time it takes to complete research and the waiting publication period for some publications, especially journals and books. This categorisation should be regarded as an indicator rather than to be taken as an absolute, particularly if the analysis is over a number of years. The Department began this categorisation in its analysis of publications outputs in 2010.

The purpose of the categorisation is not necessarily to compare CESM categories as there may be differences in the number of academics; the development and resourcing of the relevant fields by institutions and other permutations. Instead, it should be used to identify

potential for possible policy improvement and resource allocation at institutional level. The total publication output units by CESM categories for 2011 and 2012 are shown in Table 11 (highest publication output units CESM categories), Table 12 (middle publication output units CESM categories), and Table 13 (low publication output units CESM categories). Growth or decline of output units per CESM category from 2011 to 2012 can be observed in each of the tables. It can be seen that 70.8% of all output units were produced in the 8 CESM categories shown in Table 11.

**Table 11:** Total Publication Research Output Units in Highest Output CESM Categories (6% and above of publication output units)

CESM Category	2011		2012	
	No. of Units	% of Total	No. of Units	% of Total
09: Health Professions and Related Clinical Sciences	<b>1714.13</b>	<b>15.3%</b>	1876.26	15.2%
13: Life Sciences	<b>1103.65</b>	<b>9.9%</b>	1128.00	9.1%
20: Social Sciences	<b>953.74</b>	<b>8.5%</b>	1049.49	8.5%
14: Physical Sciences	<b>1147.26</b>	<b>10.3%</b>	1028.22	8.3%
04: Business, Economics and Management Sciences	<b>814.91</b>	<b>7.3%</b>	1011.15	8.2%
01: Agriculture, Agricultural Operations and Related Sciences	<b>709.3</b>	<b>6.3%</b>	943.58	7.6%
08: Engineering	<b>883.05</b>	<b>7.9%</b>	893.62	7.2%
07: Education	<b>659.63</b>	<b>5.9%</b>	828.35	6.7%
<b>TOTAL</b>	<b>7985.67</b>	<b>71.36%</b>	<b>8758.67</b>	<b>70.8%</b>

NB: The percentages are calculated on the overall total publications output units (11 191 units for 2011 and 12 363.81 units for 2012) and not of only that of each table.

Considering the cautions stated in the previous two paragraphs, a meaningful analysis of the output by CESM category should cover the data over a number of years and not just two. However, these tables do accurately indicate areas of potential. It is noted that the quality of data is dependent on the accurate capturing of outputs in each CESM category by institutional research offices.

**Table 12:** Total Publication Research Output Units in Middle Output CESM categories (between 1.5% and 5.9% output)

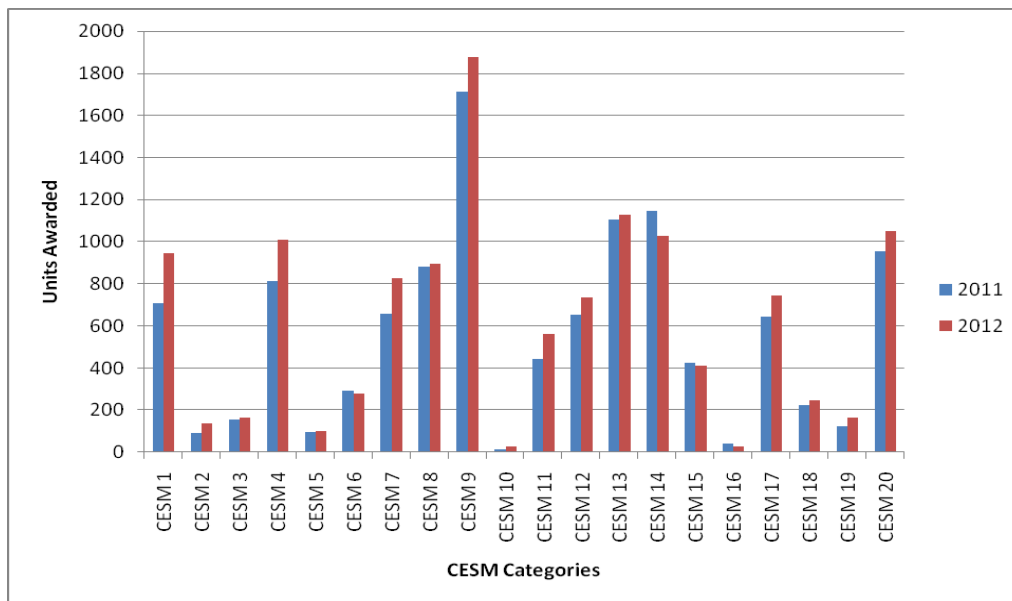
CESM	2011		2012	
	No. of Units	% of total	No. of Units	% of total
17: Philosophy, Religion and Theology	646.02	5.8%	743.75	6.0%
12: Law	653.63	5.8%	735.82	6.0%
11: Languages, Linguistics and Literature	442.52	4.0%	559.62	4.5%
15: Mathematics and Statistics	424.96	3.8%	412.52	3.3%
6: Computer & Information Sciences	294.02	2.6%	279.07	2.3%
18: Psychology	222.53	2.0%	247.01	2.0%
<b>TOTAL</b>	<b>2683.68</b>	<b>24%</b>	<b>2977.79</b>	<b>24.1%</b>

**Table 13:** Total Publication Research Output Units in low output CESM Categories (below 1.5%)

CESM	2011		2012	
	No. of Units	% of total	No. of Units	% of total
19: Public Management and Sciences	124.34	1.10%	166.4	1.3%
03: Visual Arts and Performing Arts	153.99	1.40%	164.29	1.3%
02: Architecture and Built Environment	90.85	0.80%	138.37	1.1%
05: Communication, Journalism and Related Studies	97.46	0.90%	102.51	0.8%
10: Family Ecology and Consumer Sciences	14.15	0.10%	28.36	0.2%
16: Military Sciences	40.85	0.40%	27.42	0.2%
<b>TOTAL</b>	<b>521.64</b>	<b>4.66%</b>	<b>627.35</b>	<b>4.9%</b>

Figure 8 is a graphical presentation of the 2011 and 2012 research publication output units by CESM category. It would appear that a similar pattern remains from year to year, however multiple year analysis of CESM categories should be carried out in future.

**Figure 8:** Total output by Classification of Education Subject Matter (CESM) Category



The above analysis considers publications only per CESM category. However since the number of permanently employed academics at institutions differs from one field to another, it is also necessary to also take into account the number of academics working in each CESM category in order to calculate per capita output by CESM category. Such a calculation is shown in Table 14, i.e. publication output units per permanently employed academic in a CESM category per annum (2012).

As already stated, and relevant to the interpretation of the information contained in Table 14, and generally in relation to CESM categories, it must be noted that some programmes have relatively smaller or larger student enrolments than others. Therefore, the workload of academics is not similar across the sector and this may have a bearing on research output per capita per CESM category. Moreover, institutions have differing number of academics who are not permanently employed as lecturers, or are emeriti, and produce research in the name of the institution concerned.

**Table 14:** Per Capita Output of Research/Instructional Staff per CESM Category (as per HEMIS data) in 2012

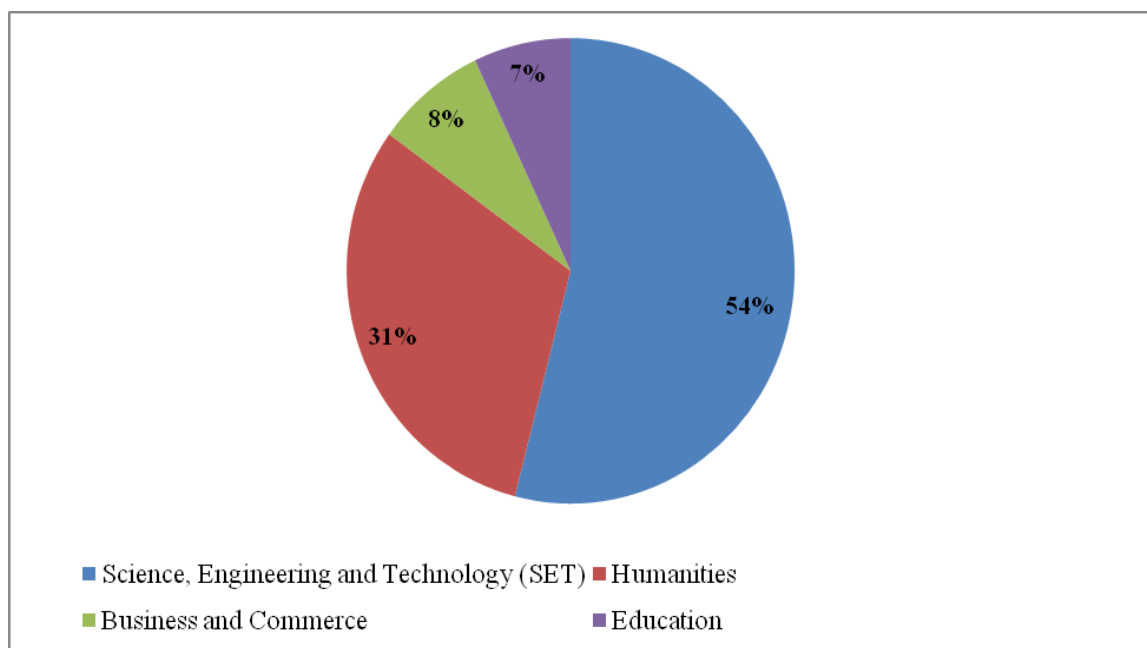
<b>CESM Category</b>	<b>No. of research or instructional staff</b>	<b>Total Units</b>	<b>Per capita outputs</b>
16: Military Sciences	5	27.42	5.48
17: Philosophy, Religion and Theology	312	743.75	2.38
01: Agriculture, Agricultural Operations & Related Sciences	448	943.58	2.10
20: Social Sciences	1032	1049.49	1.01
13: Life Sciences	1277	1128.00	0.88
12: Law	870	735.82	0.84
14: Physical Sciences	1363	1028.22	0.75
09: Health Professions & Related Clinical Sciences	2959	1876.26	0.63
08: Engineering	1439	893.62	0.62
11: Languages, Linguistics and Literature	951	559.62	0.58
07: Education	1502	828.35	0.55
19: Public Management	314	166.40	0.52
18: Psychology	500	247.01	0.49
15: Mathematics & Statistics	846	412.52	0.48
12: Architecture & Built Environment	297	138.37	0.46
04: Business, Economics & Management Studies	2957	1011.15	0.34
05: Communication, Journalism & Related Studies	349	102.51	0.29
06: Computer & Information Sciences	939	279.07	0.29
03: Visual & Performing Arts	677	164.29	0.24
10: Family Ecology & Consumer Sciences	115	28.36	0.24
<b>Total</b>	<b>19 152</b>	<b>12 363.81</b>	

**NB:** The number of academics in the table above includes all academic staff regardless of their status of employment with individual institutions; whereas Table 17 shows academics that are permanently employed by the individual institutions.

## 7.2. Overall Publication Output Units by Broad Field of Study

Analysis of output units by broad academic/scientific field of study shows that more than half (54%) of all output units are produced by researchers in the Science, Engineering and Technology (SET) fields, followed by Humanities (31%), Business and Commerce (8%), and Education 7% (Figure 9). The pattern would remain the same even if Education were added into the Humanities. Humanities tends to produce more book publications than any other field, with 12% of the Humanities' total output units in book publications, whereas only 1% of the output units from the SET are in books (Figure 10).

**Figure 9:** Total publication output units by broad field<sup>1</sup>



<sup>1</sup> The CESM categories in each broad field are:

**Science, Engineering and Technology** = CESM 1, 6, 8, 9, 10, 13, 14, 15 and 16;

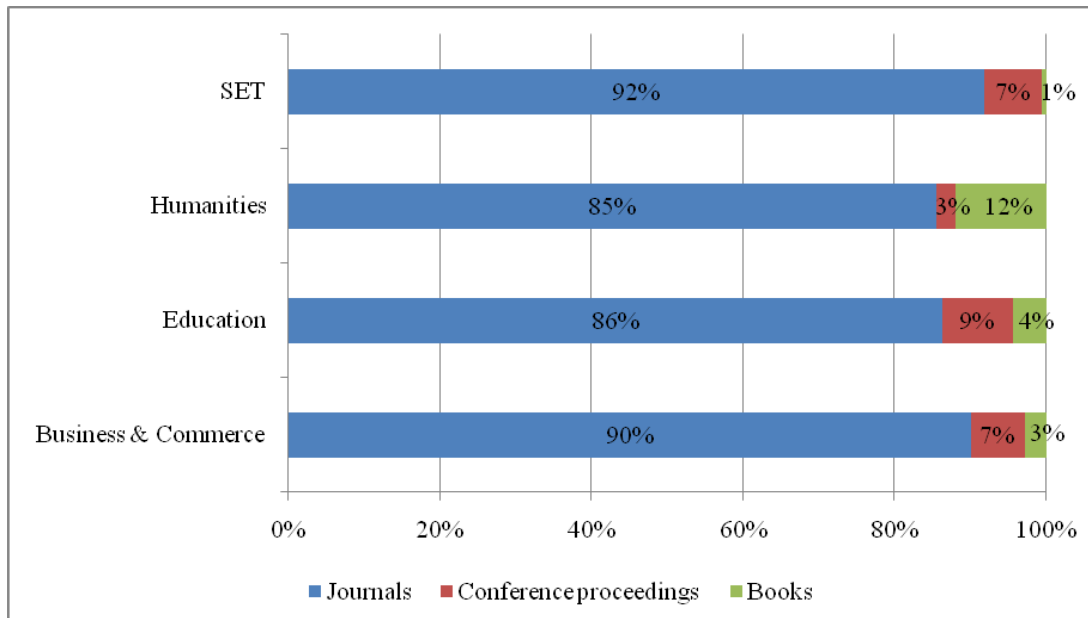
**Humanities** = CESM 2, 3, 5, 11, 12, 17, 18, 19, and 2;

**Education** = CESM 7;

**Business and Commerce** = CESM 4.

Figure 10 illustrates the total publication output units in each field of study by publication type. Within each broad field of study, the highest proportion of publication output (>85%) comes from Journals articles.

**Figure 10:** Total output by broad field, by type of publication



### 7.3. Overall Publication Output Units by Institution and Institutional Type

The proportion of the total output units awarded to each institution, expressed as a percentage, is shown in Table 15. Two universities, the Universities of KwaZulu-Natal and Pretoria contributed the highest proportion of the total output units awarded, by volume (i.e. un-weighted number of publications units), both with 11.5%, although UKZN accrued 0.11 units more than UP (with 1424.22 and 1424.11 total units, respectively). The total output of these two institutions amounts to just more than one fifth of the output of the system. The next three institutions collectively produced just over one third of all the research output, with UCT contributing 11.2% (1390.89 units), SU 10.7% (1323.30 units) and WITS 9% (1114.46 units). The percentage share of overall output units by the first five institutions in Table 15 is therefore 54%, that is, more than half the publication output units are produced by these five institutions.

In 2011 these five universities produced 54.2% of the output units, so the proportion over 2012 and 2011 remains similar. It should be noted however that the proportion of the total output units produced by these five institutions in 2012, compared to the proportion in 2008,



shows a marked decline from 60.4% of the total output. Given the investment in research development in the country this is a good sign and indicates the improvement of other institutions that were previously less research productive.

If one looks at the volume of output units produced by the next 7 institutions in the table, (from number 6 (UNISA) in the table to number 12 (NMMU)), a steady increase is seen from 32.9% of the total outputs in 2008 to 35.4% in 2012. These institutions now collectively produce more than a third of all the output units. Considering the next eleven institutions, we also see an increase in the share of overall publication output units produced, from 6.9% in 2008 to 10.7% in 2012.

**Table 15:** Percentage of total output units produced by each institution (2008-2012), listed in descending order by Volume of Output Units in 2012

	<b>Institution</b>	<b>2012</b>	<b>2011</b>	<b>2010</b>	<b>2009</b>	<b>2008</b>
1.	UKZN	<b>11.5%</b>	11.2%	11.8%	12.2%	11.7%
2.	UP	<b>11.5%</b>	11.7%	12.2%	13.0%	14.2%
3.	UCT	<b>11.2%</b>	11.7%	12.9%	13.0%	13.0%
4.	SU	<b>10.7%</b>	10.3%	10.6%	11.5%	11.4%
5.	WITS	<b>9.0%</b>	9.3%	9.6%	10.1%	10.1%
	<b>Total</b>	<b>54.0%</b>	54.2%	57.1%	59.8%	60.4%
6.	UNISA	<b>7.2%</b>	7.1%	7.5%	6.9%	7.8%
7.	UJ	<b>7.1%</b>	6.9%	6.3%	5.1%	4.7%
8.	NWU	<b>7.0%</b>	6.6%	6.0%	4.9%	6.0%
9.	UFS	<b>5.2%</b>	5.1%	5.1%	5.6%	5.3%
10.	RU	<b>3.3%</b>	3.2%	3.3%	3.9%	4.0%
11.	UWC	<b>3.0%</b>	3.1%	2.7%	3.1%	2.9%
12.	NMMU	<b>2.5%</b>	3.1%	2.6%	2.5%	2.2%
	<b>Total</b>	<b>35.3%</b>	35.1%	33.5%	32.0%	32.9%
13.	TUT	<b>1.9%</b>	2.2%	1.9%	1.4%	1.7%
14.	UL	<b>1.8%</b>	1.3%	1.0%	0.8%	1.0%
15.	UFH	<b>1.7%</b>	1.6%	1.5%	1.5%	1.0%
16.	CPUT	<b>1.4%</b>	1.3%	1.6%	1.4%	1.0%
17.	UV	<b>1.0%</b>	1.2%	0.8%	0.6%	0.4%
18.	DUT	<b>0.7%</b>	0.8%	0.5%	0.5%	0.3%
19.	VUT	<b>0.6%</b>	0.7%	0.5%	0.4%	0.2%
20.	UZ	<b>0.6%</b>	0.6%	0.7%	0.8%	0.8%
21.	WSU	<b>0.5%</b>	0.4%	0.5%	0.3%	0.2%
22.	CUT	<b>0.5%</b>	0.4%	0.4%	0.4%	0.3%
23.	MUT	<b>0.1%</b>	0.2%	0.1%	0.0%	0.0%
	<b>Total</b>	<b>10.7%</b>	10.7%	9.5%	8.1%	6.9%

Comparing the percentages for 2011 and 2012 however, show that there was very little change.

The ranking of institutions by total output units, as is shown in Table 15, while giving an indication of which institutions are producing the greatest output per volume is not very helpful from a policy perspective. This fails to take into account the relative size of the institution, both in terms of its staff complement, and in terms of its student enrolment. A more effective way of considering the research productivity of individual institutions is to consider the per capita research output of academic staff.

Table 16 below shows the publication output units per permanent academic staff member. As can be seen in the Table the average publication output units per permanent academic staff member (or per capita output) for all institutions for 2012 was 0.60 units, an increase from 0.57 units in 2011, and 0.48 units in 2008. Generally, the per capita output across institutions has been on the increase since 2008, with only one institution (UZ) showing a slight drop over this period. This is a good sign and reflects an improved research publication productivity rate across the system.

Stellenbosch University (SU) had the highest per capita output of publication output units in 2012 (1.36 units per permanently employed academic), followed by UCT with 1.29 units. Six universities (SU, UCT, RU, UP, Wits and UKZN) produced more than 1 publication output unit per permanently employed staff member, up from 4 universities in 2011.

The comparison in Table 16 is more helpful than that in Table 15, and is a better measure of the research productivity of individual institutions. This table shows the publication output units per permanently employed research/instructional staff over a period of 5 years (2008-2012)

**Table 16:** Per capita research publication output units, 2008 -2012; listed in descending order by 2012 per capita output units.

Institution	2012	2011	2010	2009	2008	Average 2008-2012
SU	1.36	1.22	1.13	1.20	1.09	1.20
UCT	1.29	1.25	1.28	1.23	1.16	1.24
RU	1.22	1.12	1.01	1.09	1.07	1.10
UP	1.11	1.03	0.71	0.73	0.72	0.86
WITS	1.04	0.99	0.94	0.94	0.86	0.95
UKZN	1.02	0.85	0.82	0.76	0.66	0.82
UJ	0.87	0.89	0.69	0.55	0.46	0.69
NWU	0.70	0.61	0.54	0.45	0.54	0.56
UFS	0.68	0.67	0.62	0.66	0.58	0.64
UWC	0.66	0.65	0.52	0.53	0.46	0.56
UNISA	0.56	0.53	0.52	0.45	0.50	0.51
NMMU	0.52	0.61	0.45	0.40	0.35	0.46
UFH	0.66	0.62	0.49	0.39	0.26	0.48
UV	0.39	0.40	0.24	0.19	0.12	0.26
TUT	0.27	0.29	0.23	0.16	0.18	0.22
UL	0.27	0.18	0.12	0.10	0.11	0.15
UZ	0.24	0.26	0.12	0.30	0.27	0.23
CPUT	0.22	0.19	0.21	0.18	0.12	0.18
CUT	0.22	0.18	0.15	0.14	0.11	0.16
VUT	0.22	0.22	0.14	0.12	0.07	0.15
DUT	0.13	0.15	0.08	0.09	0.05	0.10
WSU	0.10	0.07	0.09	0.04	0.03	0.06
MUT	0.09	0.13	0.05	0.03	0.01	0.06
<b>Average</b>	<b>0.60</b>	<b>0.57</b>	<b>0.48</b>	<b>0.47</b>	<b>0.43</b>	<b>0.51</b>

Figure 11 below shows the percentage share of the total research publication output units by institutional type over the period 2008-2012. The comprehensive universities and the UoTs had a slight drop (a percentage point each) in their share of total outputs, from 18% in 2011 to 17% 2012 for comprehensive universities, and from 6% to 5% for UoTs. However, generally there has been an increase in the % share of publication output units at the two types of institutions over the past five years, while there has been a corresponding drop at the traditional universities during the same period. The system must still determine the desired balance, which should be based on the research missions of each institutional type and research expectations from each institution within each institutional type.

**Figure 11:** Percentage Share of Total Research Publication Output Units by Institutional Type, 2008-2012

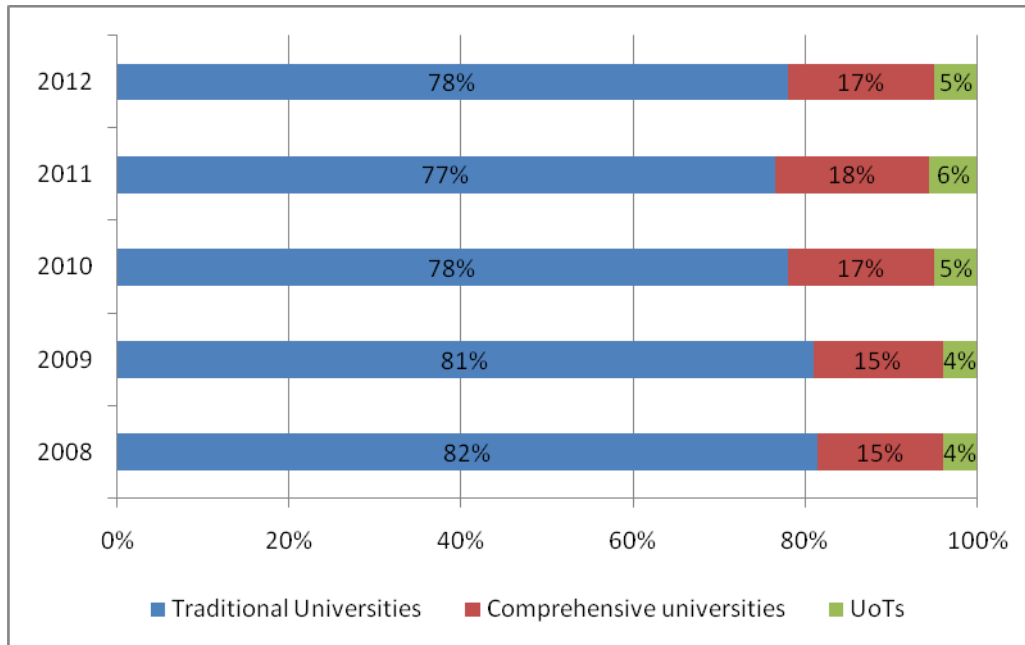


Table 17 shows the weighted research output units per capita (i.e. output units per permanently employed academic per annum, including publications, Research Masters and PhD graduates). SU achieved the highest per capita output with 3.06 units, followed by UCT with 2.38 units.

**Table 17:** Weighted Research Per Capita Output According to the Norms<sup>2</sup>, 2012 (Not Clustered)

HEI	Headcount Permanently Employed Academics (a)	Research Publications in Units (1)	Research Masters Graduates in Units (2)	Doctorate Graduates in Units (3)	Total Research Output Units (1+2+3)	Weighted Output per capita (1+2+3)/a
SU	973	1323.30	938.81	720	2982.11	3.06
UCT	1077	1390.89	578.65	594	2563.54	2.38
RU	336	409.93	166.75	201	777.68	2.31
UP	1281	1424.11	722.17	600	2746.28	2.14
WITS	1074	1114.46	520.84	450	2085.30	1.94
UKZN	1399	1424.22	532.26	531	2487.48	1.78
<b>TOTAL</b>	<b>6140</b>	<b>7086.67</b>	<b>3456.48</b>	<b>3096</b>	<b>13642.39</b>	<b>2.22</b>
UFH	315	208.57	147.50	129	485.07	1.53
UWC	559	366.88	254.00	225	845.88	1.51
UJ	1009	873.91	289.50	327	1490.41	1.47
NMMU	596	311.53	280.29	258	849.82	1.42
NWU	1248	869.19	432.81	462	1764.00	1.41
UFS	949	643.93	274.12	282	1200.05	1.26
<b>TOTAL</b>	<b>4676</b>	<b>3274.01</b>	<b>1678.22</b>	<b>1683</b>	<b>6635.23</b>	<b>1.42</b>
UNISA	1588	892.52	320.81	456	1669.33	1.05
UZ	298	72.91	45.00	84	201.91	0.67
TUT	855	229.89	139.75	132.00	501.64	0.58
UV	328	127.85	19.75	36	183.60	0.55
UL	825	219.23	182.50	51	452.73	0.54
CPUT	765	167.51	116.50	72.00	356.01	0.46
VUT	341	75.30	44.00	6.00	125.30	0.36
CUT	274	58.93	20.50	15.00	94.43	0.34
DUT	599	80.44	35.50	15.00	130.94	0.21
WSU	583	60.62	11.88	9	81.50	0.13
MUT	179	17.69	0.00	0.00	17.69	0.09
<b>TOTAL</b>	<b>6635</b>	<b>2002.89</b>	<b>936.19</b>	<b>876</b>	<b>3815.08</b>	<b>0.57</b>
<b>OVERALL TOTALS</b>	<b>17451</b>	<b>12367.81</b>	<b>6073.89</b>	<b>5655</b>	<b>24092.70</b>	<b>1.38</b>

Table 18 shows permanently employed research staff with either a Masters or PhD as highest qualification in 2011 and 2012. In both years, UKZN had the highest number in the sector of research staff with Masters and PhD as the highest qualifications. Although in total, there was a marginal increase of academics with Masters and PhD qualifications (21) at the institution, there were significant changes within the two levels of qualifications. The number of

<sup>2</sup> The norms for the three clusters of universities in Table 17 are a maximum of 2.5; 1.7 and 1.1 units respectively.

academics with a PhD qualification increased by 6.2% (57). Probably this is one of the reasons UKZN produced more research output units in 2012 compared to 2011. Notably, academics with Masters as the highest qualification decreased by 36, and it can be assumed that some of these contributed in the increase to those with a PhD qualification. UNISA had the second highest number of academics with a Masters and PhD as the highest qualifications in 2012, quite a significant upsurge compared to 2011. This was marked by a significant increase of 20.9% from 2011 figures. There was a 7.5% (123) increase on academics with a PhD qualification, while a modest increase of 3.9% (80) was observed for research staff with a Masters as the highest qualification.

**Table 18: Permanently employed academics by qualification, 2012.**

HEI	Permanently Employed Academics by qualifications									
	2012				2011				Academics with Masters and PhD as highest qualifications	
	Academics with Masters as Highest Qualifications		Academics with Doctorate as Highest Qualifications		Academics with Masters as Highest Qualification		Academics with Doctorate as Highest Qualification			
	Headcount	% of total	Headcount	% of total	Headcount	% of total	Headcount	% of total	2012	2011
UKZN	443	31.7%	663	47.4%	479	32.6%	606	41.2%	1106	1085
UNISA	452	28.5%	612	38.5%	372	24.6%	469	31.0%	1064	841
NWU	381	30.5%	628	50.3%	371	31.1%	587	49.2%	1009	958
UP	378	29.5%	627	48.9%	348	27.2%	617	48.2%	1005	965
UCT	305	28.3%	699	65.0%	300	28.4%	667	63.2%	1004	967
WITS	326	30.4%	595	55.4%	337	32.3%	560	53.6%	921	897
UFS	445	46.9%	380	40.0%	378	44.7%	354	41.8%	825	732
SU	252	25.9%	518	53.2%	267	28.4%	523	55.7%	770	790
UJ	325	32.2%	294	29.1%	318	36.5%	287	33.0%	619	605
UWC	196	35.1%	290	51.9%	182	34.0%	283	52.8%	486	465
TUT	306	35.8%	178	20.8%	315	37.7%	165	19.7%	484	480
CPUT	341	44.6%	124	16.2%	335	43.9%	108	14.2%	465	443
NMMU	214	35.9%	242	40.6%	214	37.0%	228	39.4%	456	442
UL	299	36.2%	132	16.0%	328	40.7%	147	18.2%	431	475
DUT	279	46.6%	88	14.7%	261	44.1%	73	12.3%	367	334
RU	103	30.7%	171	50.9%	100	31.3%	174	54.5%	274	274
UV	160	48.8%	103	31.4%	156	48.0%	103	31.7%	263	259
UFH	121	38.4%	119	37.8%	119	40.9%	102	35.1%	240	221
WSU	165	28.3%	70	12.0%	180	29.7%	73	12.0%	235	253
UZ	119	39.9%	79	26.5%	109	40.4%	82	30.4%	198	191
VUT	150	43.9%	44	12.9%	142	42.5%	46	13.8%	194	188
CUT	114	41.6%	72	26.3%	106	39.4%	75	27.9%	186	181
MUT	79	44.1%	16	8.9%	85	43.1%	16	8.1%	95	101
<b>Overall Totals</b>	<b>5953</b>	<b>35.2%</b>	<b>6744</b>	<b>38.5%</b>	<b>5802</b>	<b>35.5%</b>	<b>6345</b>	<b>38.0%</b>	<b>12697</b>	<b>12147</b>

It will also be observed that among other institutions, changes were marginal between Masters and PhD as highest qualifications. The sector's overall number of academics with Masters and PhD qualifications went up by 4% (550) in 2012. This certainly is a positive development as the department is eager to improve staff qualifications at HEIs through its Research Development Grant initiative. Hopefully, such improvements would result in increased research productivity and the quality of research.

## **8. General Observations and Conclusions**

The quality of submissions in 2013 was generally good. However, it is clear that the change in personnel in Research Offices impacts significantly on the quality of submissions. That is, submissions from those institutions that lost staff members before the 2013 submission cycle were less than satisfactory. Several submissions were returned to institutions for improvement before they could be processed for the research outputs panel evaluation. This indicates that new staff members need help with understanding the Policy and all the procedures involved. The DHET therefore urges institutions to contact the Directorate: Policy and Development Support to seek assistance whenever there are new staff members in the Research Offices, and for any other question they may have.

The Department urges institutions to follow strict research ethical practices, particularly with regard to the claiming of outputs by individuals who are clearly not employed by the claiming institution, or claiming publications of visiting scholars who spend very little time at the claiming institution. The Department is aware that some institutions are appointing individuals as honorary employees, who are based elsewhere, so that they can, in turn, claim subsidy for the publications produced by these individuals. Institutions are urged to regulate such unacceptable practices, failing which the Department will be forced to develop its own regulations and sanctions. Moreover, such practices skew the Department's targeted approach to develop institutions that are either showing potential or are less developed with regard to research.

The high non-approval rate for book publications remains a major concern. Institutions are, therefore, urged to apply stricter measures to scrutinise book publications before they are submitted to the Department. Ideally, non-approval of claimed book publication units due to

technical requirements should be completely eliminated. In future, the Department will tighten its scrutiny on book publications and will put the onus on authors and institutional research offices for ensuring compliance with policy and it is expected that only scholarly publications will be submitted. The Department, in this regard, may also be forced to develop its own regulations and sanctions. It is advisable, therefore, that institutions begin to ensure quality submissions that, as a minimum standard, comply with the policy.