**Table 1**:The four themes and ten student engagement indicators in SASSE

|  |  |
| --- | --- |
| Theme | Indicator |
| Academic challenge | ***Higher-order learning (HO)***: amount academic work emphasized challenging learning tasks, including applying learned information to practical problems, identifying ideas and experiences, evaluating information from other sources, and forming new ideas |
| ***Reflective and integrative learning (RI)***: how often students connected prior knowledge, other modules or subjects, and societal issues; took into account diverse perspectives; reflected on their own views while examining the views of the others |
| ***Learning strategies (LS)***: How often students enacted basic strategies for academic success, for example, identifying important information in readings, reviewing notes after classes, summarizing subject material |
| ***Quantitative reasoning (QR)***: How often students engaged with numerical and statistical information across curriculum, and used such information to examine real-world problems, reach conclusions, and evaluate what others have concluded |
| Learning with peers | ***Collaborative learning (CL)***: How often collaborated with others when mastering difficult material, such as explaining materials to others, preparing for exams, working on group projects, and asking for help |
| ***Discussion with diverse others (DD)***: How often students discussed with people who differ from themselves in terms of economic background, religious belief, ethnicity, or political views |
| Experience with staffs | ***Student-staff interaction (SS)***: How often students had meaningful and substantive interactions with advisors and lecturers, such as discussing career plans, subject material outside class or discussing their academic performance, and working on student groups or committees |
| ***Effective teaching practices (ET)***: Amount lecturers emphasised student comprehension and learning, by means of clear explanations and organisation, using illustrative examples, and providing feedback that is formative and effective. |
| Campus environment | ***Quality of interaction (QI)***: How students rated their interactions with important people in their learning environment, such as academic staff, student support services, peer learning support, and other students |
| ***Supportive environment (SE)***: Amount the institution emphasised help for students to persist and learn through academic support programs, encouraged diverse interactions, and provided social opportunities, campus activities, wellness, health, and support for non-academic responsibilities |

Source: University of Free State 2015.

**Figure 1**: Mean score of each engagement indicator



Source: Authors’ own calculations using the 2013 SASSE data.

**Table 2**: Mean score of each indicator by faculty, gender and race

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Faculty** | | | | **Gender** | | **Race** | | |
| EMS | Education | Arts | Science | Male | Female | Black | Coloured | Indian/White |
| HO | 42.08 | 37.20\* | 42.09 | 39.88 | 40.12 | 42.10 | 42.36 | 40.35 | 39.86 |
| RI | 34.83 | 37.13 | 36.69 | 31.55\*\*\* | 34.93 | 34.93 | 34.60 | 35.46 | 34.32 |
| LS | 34.55 | 33.10 | 35.16 | 36.43 | 34.11 | 35.30 | 35.62 | 33.80 | 36.76 |
| QR | 28.74 | 19.45\* | 18.92\*\* | 27.75 | 27.72 | 22.71# | 26.68 | 22.52## | 25.28 |
| CL | 38.67 | 35.00 | 34.34\*\* | 36.39 | 36.34 | 36.95 | 37.61 | 35.68 | 36.37 |
| DD | 41.67 | 44.76 | 44.33 | 44.05 | 42.15 | 43.85 | 40.79 | 44.51## | 50.00### |
| SS | 14.39 | 16.53 | 15.27 | 14.28 | 16.93 | 13.44# | 15.52 | 13.86 | 16.27 |
| ET | 39.36 | 39.78 | 39.54 | 37.37 | 39.10 | 39.05 | 41.78 | 36.94## | 34.24### |
| QI | 15.58 | 15.92 | 15.53 | 14.82 | 15.93 | 15.05 | 15.67 | 15.06 | 16.18 |
| SE | 35.88 | 34.85 | 34.02 | 33.53 | 35.12 | 34.48 | 38.30 | 32.20## | 29.32### |

Source: Own calculations using the 2013 UWC SASSE data

\* The Education students’ mean score is statistically significant from the EMS students’ mean score at α = 5%.

\*\* The Arts students’ mean score is statistically significant from the EMS students’ mean score at α = 5%.

\*\*\* The Science students’ mean score is statistically significant from the EMS students’ mean score at α = 5%.

# The female mean score is statistically significant from the male mean score at α = 5%.

## The Coloured mean score is statistically significant from the Black mean score at α = 5%.

### The Indian/White mean score is statistically significant from the Black mean score at α = 5%.

**Table 3**:Descriptive statistics on the average final mark in each quintile

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Quintile** | **Proportion** | **Mean** | **Minimum** | **Maximum** |
| Quintile 1 | 20% | 44.52 | 3.50 | 52.42 |
| Quintile 2 | 20% | 55.56 | 52.43 | 58.43 |
| Quintile 3 | 20% | 60.55 | 58.44 | 62.83 |
| Quintile 4 | 20% | 65.32 | 62.85 | 67.92 |
| Quintile 5 | 20% | 72.80 | 68.00 | 90.80 |
| All | 100% | 59.73 | 3.50 | 90.80 |

Source: own calculations using the students’ academic results from the university marks administration database.

**Table 4:** Demographic information of students in each average final mark quintile

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Quintile** | **Gender** | | **Ethnicity** | | |
| Male | Female | Black | Coloured | Indian/White |
| Quintile 1 | 51.2% | 48.9% | 64.9% | 31.6% | 3.4% |
| Quintile 2 | 42.8% | 57.2% | 56.1% | 38.7% | 5.2% |
| Quintile 3 | 45.7% | 54.3% | 43.4% | 52.0% | 4.6% |
| Quintile 4 | 34.7% | 65.3% | 41.6% | 48.0% | 10.4% |
| Quintile 5 | 33.0% | 67.1% | 28.9% | 53.2% | 17.9% |
| All | 41.5% | 58.5% | 47.0% | 44.7% | 8.3% |

Source: own calculations using the students’ academic results from the university marks administration database.

**Table 5:** Mean score of each engagement indicator area by average final mark quintile

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Quintile 1** | **Quintile 2** | **Quintile 3** | **Quintile 4** | **Quintile 5** | **All** |
| HO | 39.12 | 38.91 | 40.83 | 44.28# | 43.15# | 41.24 |
| RI | 33.53 | 33.43 | 35.69 | 36.09 | 36.24 | 34.96 |
| LS | 31.91 | 35.83 | 34.07 | 36.01# | 36.96# | 34.90 |
| QR | 25.89 | 26.11 | 22.79 | 26.59 | 22.18 | 24.72 |
| CL | 34.56 | 36.42 | 37.21 | 38.47# | 36.72 | 36.65 |
| DD | 39.94 | 40.73 | 43.44 | 45.59# | 46.59# | 43.22 |
| SS | 14.94 | 12.24 | 15.09 | 16.08 | 16.03 | 14.84 |
| ET | 39.44 | 38.86 | 37.95 | 40.23 | 38.38 | 38.98 |
| QI | 14.91 | 14.58 | 15.45 | 16.41 | 15.91 | 15.45 |
| SE | 35.20 | 34.75 | 34.84 | 35.55 | 33.71 | 34.83 |

Source: own calculations using the students’ academic results from the university marks administration database and SASSE 2013 data.

# The mean score is statistically significant at alpha = 5%, compared with the mean of the reference group (Quintile 1)

**Table 6**:Multivariate regressions

|  |  |  |  |
| --- | --- | --- | --- |
| **Dependent variable: Average final mark of the student in 2013** | | | |
| **Independent variable** | **[I]** | **[II]** | **[III]** |
| Dummy: Home language being English | 2.861\* | 3.470\* | 3.482\* |
| Dummy: Home language being Afrikaans | 0.253 | 1.629 | 1.533 |
| Dummy: Coloured | 2.235 | 1.176 | 1.525 |
| Dummy: Indian or White | 6.873\*\*\* | 4.440\*\* | 4.997\*\* |
| Dummy: Female | 2.447\*\*\* | 1.823\*\* | 2.168\*\*\* |
| Dummy: Having disability problem | -2.529\* | -2.051 | -2.289 |
| Dummy: Staying at campus residence | 2.106\*\*\* | 1.424\* | 1.497\* |
| Dummy: Senior students | -3.916\*\*\* | -3.914\*\*\* | -3.820\*\*\* |
| Dummy: Education faculty | 3.026\*\* | 3.388\*\* | 2.617\*\* |
| Dummy: Arts faculty | 2.267\*\*\* | 2.232\*\* | 2.111\*\* |
| Dummy: Science faculty | 2.950\*\*\* | 2.105\*\* | 2.130\*\* |
| Age in years | -3.603 | -3.640 | -3.623 |
| Age in years squared | 0.088 | 0.084 | 0.085 |
| Score: Higher-order learning (HO) |  | 0.099\*\*\* |  |
| Score: Reflective and integrative learning (RI) |  | -0.041 |  |
| Score: Learning strategies (LS) |  | 0.038 |  |
| Score: Quantitative reasoning (QR) |  | -0.019 |  |
| Score: Collaborative learning (CL) |  | 0.066\*\* |  |
| Score: Discussion with diverse others (DD) |  | 0.013 |  |
| Score: Student-staff interaction (SS) |  | -0.004 |  |
| Score: Effective teaching practices (ET) |  | -0.047 |  |
| Score: Quality of interaction (QI) |  | 0.077 |  |
| Score: Supportive environment (SE) |  | -0.015 |  |
| Score: Average of the 10 indicators |  |  | 0.136\*\*\* |
| Constant | 92.503\*\*\* | 90.793\*\* | 90.798\*\* |
| R-squared | 0.1356 | 0.1554 | 0.1346 |
| Adjusted R-squared | 0.1224 | 0.1268 | 0.1170 |
| Number of observations | 868 | 868 | 868 |
| \*\*\* Significant 1% \*\* Significant at 5% \* Significant at 10% | | | |

**Table A1:** SASSE Reliability

|  |  |
| --- | --- |
| Scale | Cronbach’s alpha |
| Higher-order learning (HO) | 0.799 |
| Reflective and integrative learning (RI) | 0.778 |
| Learning strategies (LS) | 0.814 |
| Quantitative reasoning (QR) | 0.679 |
| Collaborative learning (CL) | 0.713 |
| Discussion with diverse others (DD) | 0.816 |
| Student-staff interaction (SS) | 0.788 |
| Effective teaching practices (ET) | 0.818 |
| Quality of interaction (QI) | 0.776 |
| Supportive environment (SE) | 0.869 |

Source: Strydom 2014