



# Mobile Usage at UKZN: Perceptions of Technology- Assisted Learning

By

Hilary Reynolds and Dr Dale Peters

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## Table of Contents

List of Figures.....	2
List of Tables.....	2
Introduction.....	2
Comparison with 2010.....	3
The 2012 Survey.....	4
Demographics.....	4
Technology.....	6
Value of Technology in Learning.....	12
Results.....	18
Conclusions.....	21

## List of Figures

FIGURE 1: DEVICE COMPARISON BETWEEN 2010 AND 2012	3
FIGURE 2: CHANGES IN WI-FI USE BETWEEN 2010 AND 2012	3
FIGURE 3: BREAKDOWN OF RESPONDENTS BY COLLEGE	4
FIGURE 4: BREAKDOWN OF RESPONDENTS BY LEVEL OF STUDY	5
FIGURE 5: BREAKDOWN OF RESPONDENTS BY GENDER	6
FIGURE 6: BREAKDOWN OF OPERATING SYSTEMS	7
FIGURE 7: ACCESS TO EQUIPMENT OUTSIDE THE UNIVERSITY	8
FIGURE 8: USE OF PHONES TO ACCESS THE LMS	9
FIGURE 9: SKILLS PERCEPTION OF USING THE LMS	10
FIGURE 10: DIFFERENCE BETWEEN UNDERGRADUATE AND POSTGRADUATE STUDENTS REGARDING SKILLS WITH THE LMS	11
FIGURE 11: DIFFERENCE BETWEEN UNDERGRADUATE AND POSTGRADUATE STUDENTS REGARDING USE OF THE LIBRARY WEBSITE	12
FIGURE 12: THE TPACK FRAMEWORK - TECHNOLOGY, PEDAGOGY AND KNOWLEDGE	14
FIGURE 13: TECHNOLOGY STUDENTS WISH LECTURERS USED MORE OFTEN	15
FIGURE 14: TECHNOLOGY STUDENTS WISH THE UNIVERSITY USED MORE OFTEN	16
FIGURE 15: VALUE OF EMAIL TO ACADEMIC SUCCESS	17
FIGURE 16: VALUE OF LEARNING @ UKZN TO ACADEMIC SUCCESS	18

## List of Tables

TABLE 1: PERCEPTIONS OF BENEFITS	<b>ERROR! BOOKMARK NOT DEFINED.</b>
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## Introduction

A survey was conducted to interrogate the prevalence of mobile devices, amongst students at the University of KwaZulu-Natal (UKZN). The aim of the survey was primarily to track the increased usage of, and migration pattern from cell and smart phones. This report confirms a rapid migration in a usage comparison with a similar survey conducted in 2010.

The sample was considerably smaller in 2012 than in 2010. 1856 responded in 2010 and 263 in 2012. The number of students given on the DMI site is 41181, therefore the number of respondents this year provides for a 6% error at a 94.9% confidence level.

The reason for the smaller response this year may well be because the survey itself was much longer and therefore the students were more reluctant to complete it.

## Comparison with 2010

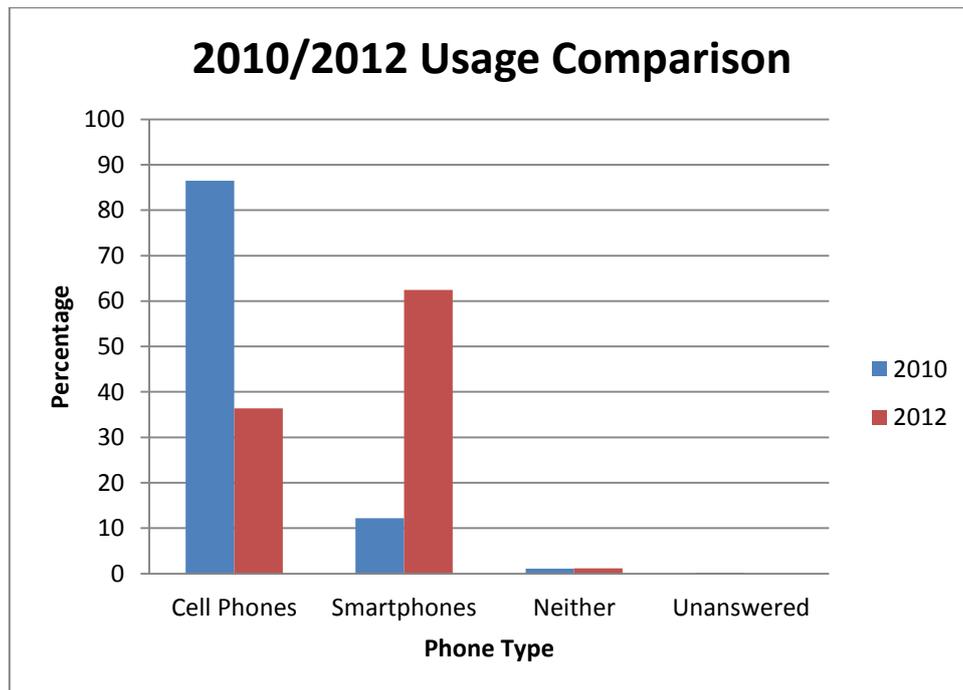


Figure 1: Device Comparison between 2010 and 2012

The move to smart phones in the two year period has been considerable with usage rising 36.4% in 2010 to 62.45% in 2012.

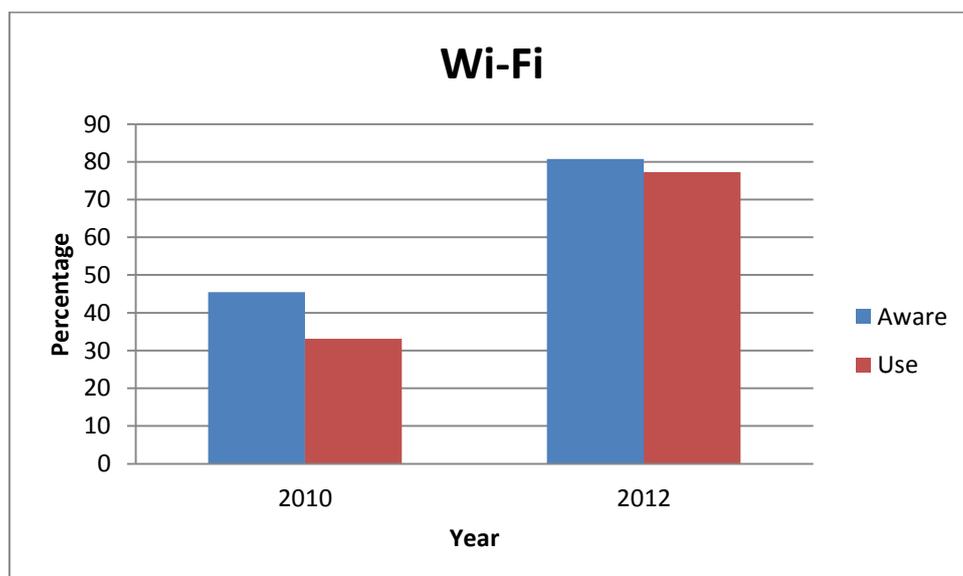


Figure 2: Changes in Wi-Fi Use between 2010 and 2012

In the same time, awareness and use of the wireless facilities has also gone up significantly with use more than doubling from 33.08% to 77.31%. Given the error margin of 6% this places usage between 71.31% and 83.31%. The Director of Infrastructure, Networks & Communications reports that in the intervening time, the number of wireless points has expanded by approximately 35%.<sup>1</sup> The expansion of use cannot therefore be explained only by the provision of additional wireless points, but to the increase in awareness and to the increase in devices able to use them.

## The 2012 Survey

The survey was far more extensive than the 2010 and interrogated how respondents felt that staff and the institution used technology and where they could use it more or less.

## Demographics

Demographic breakdowns of the respondent are as follows:

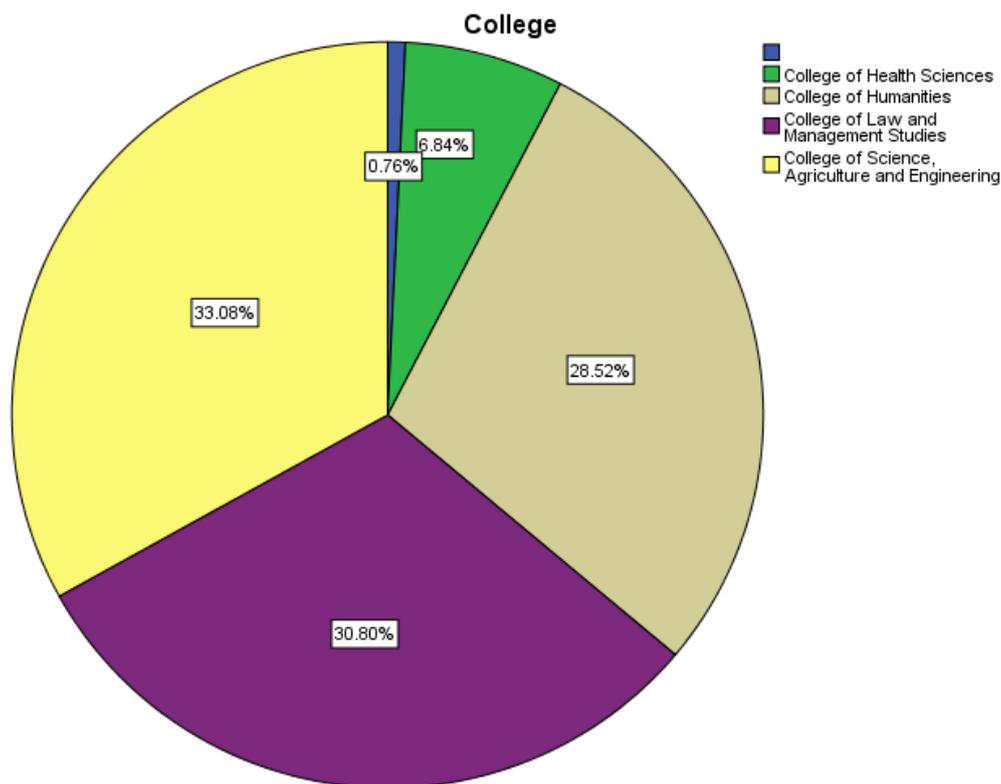


Figure 3: Breakdown of Respondents by College

Figure 3 shows respondents broken down by college of registration and shows that Health Sciences and Humanities have less respondents as a percentage than their registration whereas the respondents from Law and Management Studies as well as Science, Agriculture and Engineering had more respondents than their registration percentage.

<sup>1</sup> SHARIFF, A.(2012). Personal communication.30 October 2012.

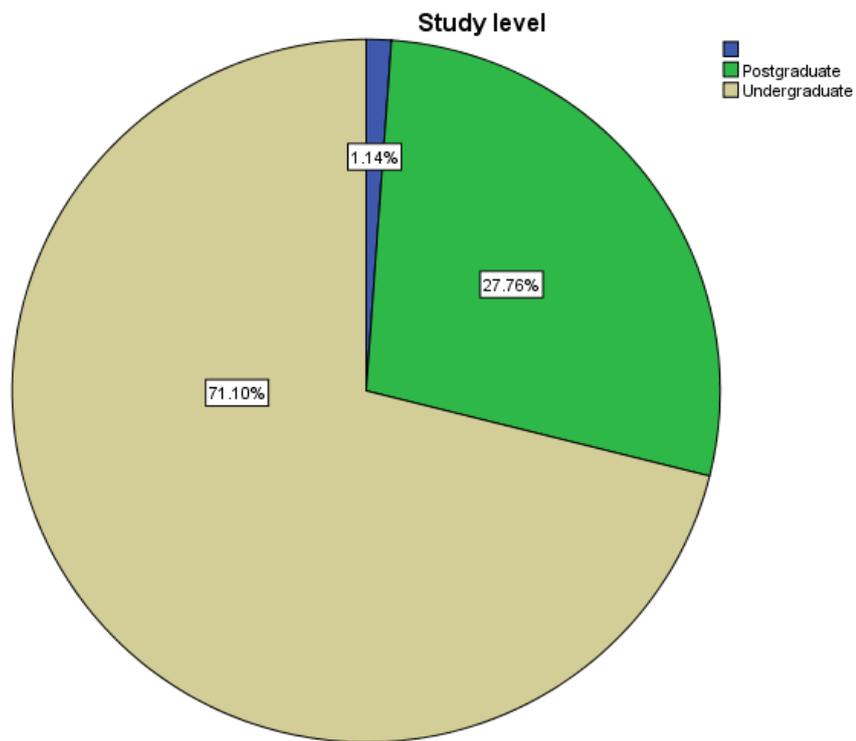


Figure 4: Breakdown of Respondents by Level of Study

Figure 4 gives the percentage of respondents by level of study. The postgraduate percentage is somewhat higher than the DMI percentage, which means that undergraduate respondents are slightly less than the percentage of enrolments they represent at UKZN.

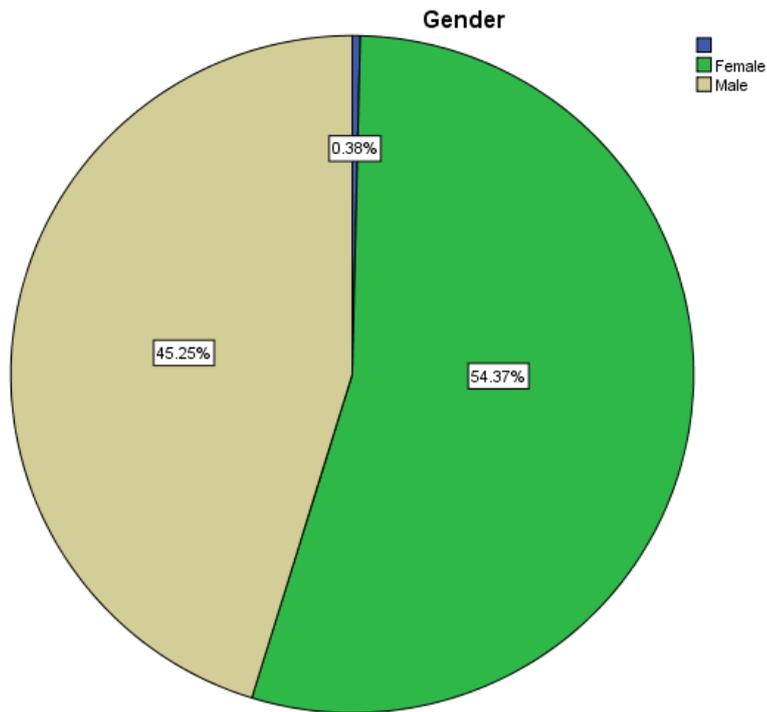


Figure 5: Breakdown of Respondents by Gender

The breakdown of respondents by gender is given in Figure 5. Females represent 58% of the student enrolment and so are slightly underrepresented as a percentage of the respondents.

## Technology

As indicated earlier, the majority of students have smart phones. The majority of these were Blackberry, followed by Android. See Figure 6 below.

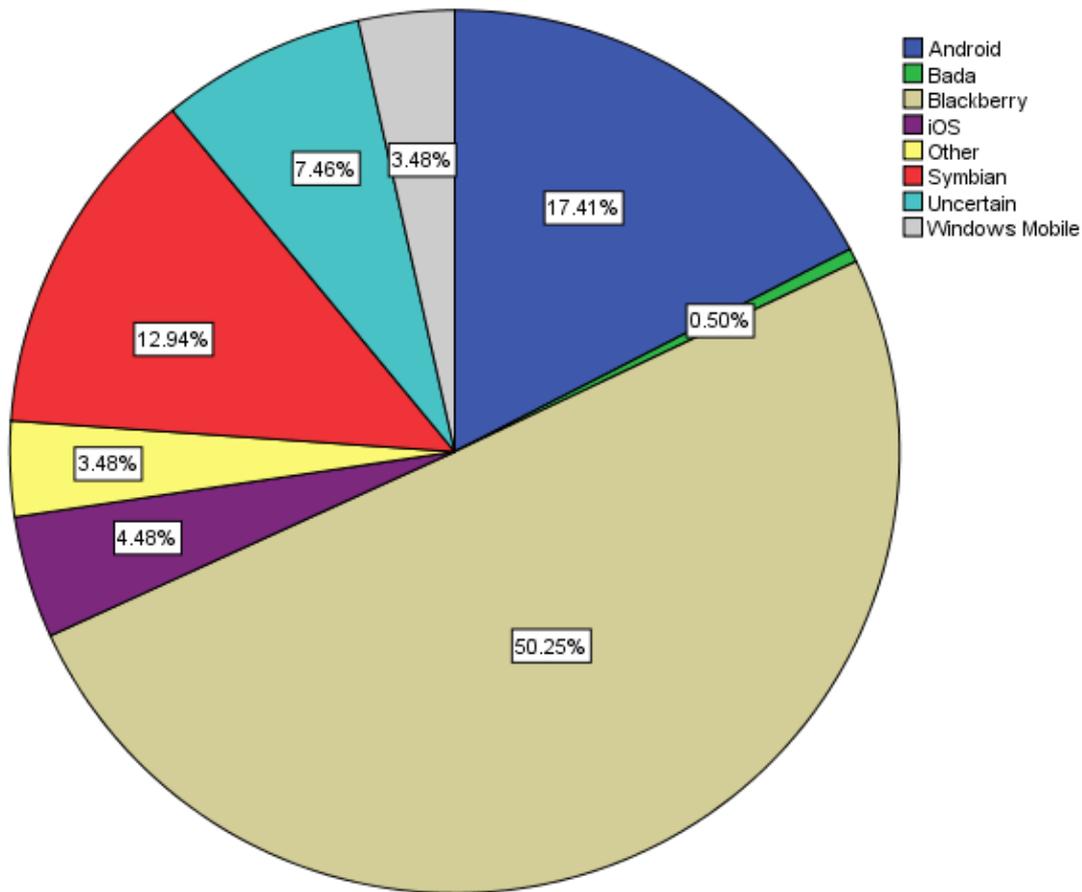


Figure 6: Breakdown of Operating Systems

The graph in figure 6, however, shows that there may in some instances be an imperfect understanding of what a smart phone is. The question as posed to respondents can be seen near the top right of the graph image. Despite the request being to select which operating system was used if they had a smartphone, some selected operating systems while their device was indicated as a cell phone. The lack of understanding may of course be due to language barriers. The prevalence of Blackberry is part of a continental trend according to Ogunlesi and Busari (2012) who state, " Blackberry's market share has been rising in the developing world, bucking the trend in Europe and North America."<sup>2</sup>

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<sup>2</sup> Ogunlesi, T. & Busari, S. (2012). Seven ways mobile phones have changed lives in Africa . <http://edition.cnn.com/2012/09/13/world/africa/mobile-phones-change-africa/index.html>

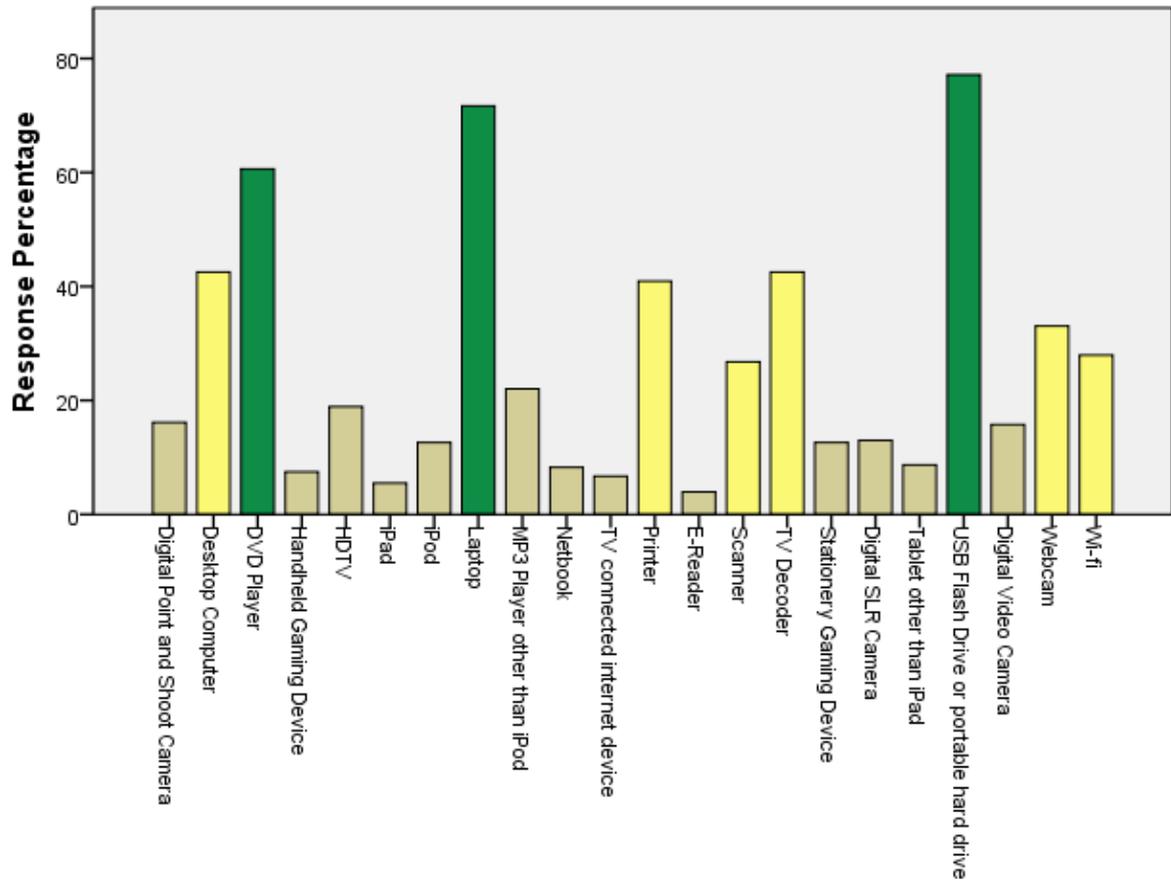


Figure 7: Access to Equipment Outside the University

Figure 7 reflects the digital equipment students have access to away from UKZN. The dark green bars indicate that more than 50% of the respondents have access to the item and the yellow bars are where between 25 and 50% has access to the particular technology. Relevant to this finding is the increase in access to a laptop from 50% to 75% since 2010.

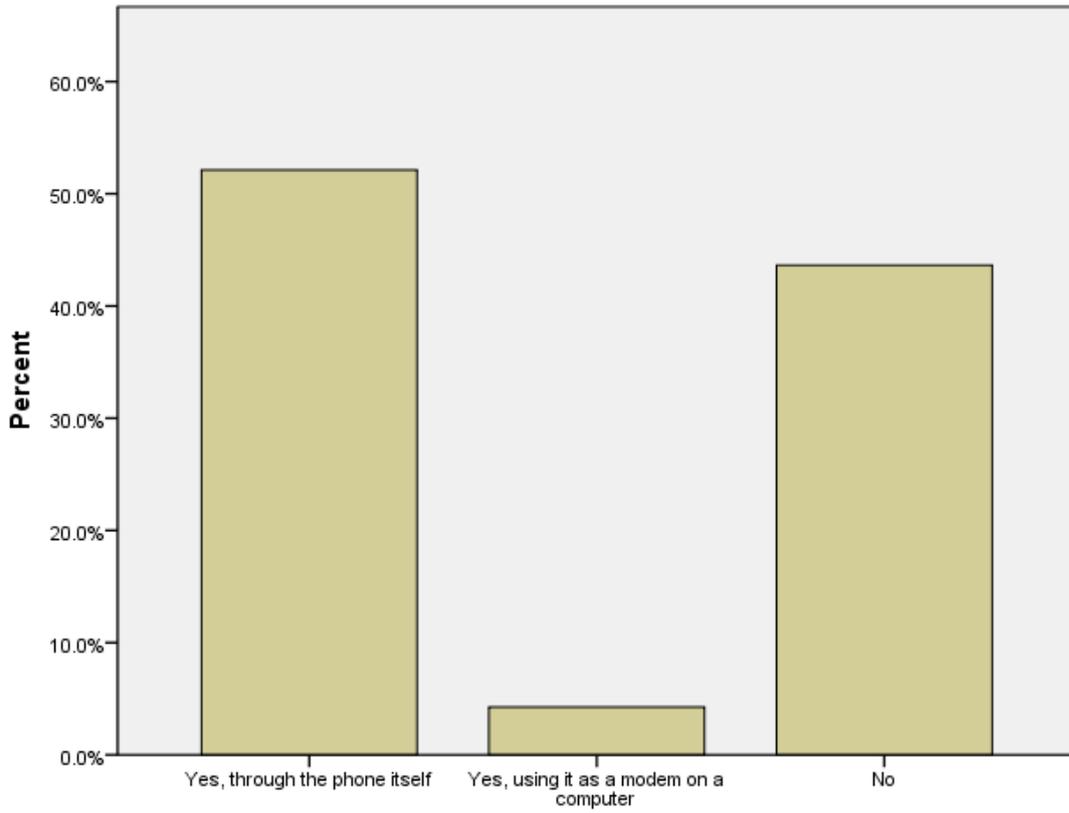


Figure 8: Use of Phones to Access the LMS

Figure 8 shows that slightly more than half the respondents use their phones to access Learning @ UKZN.

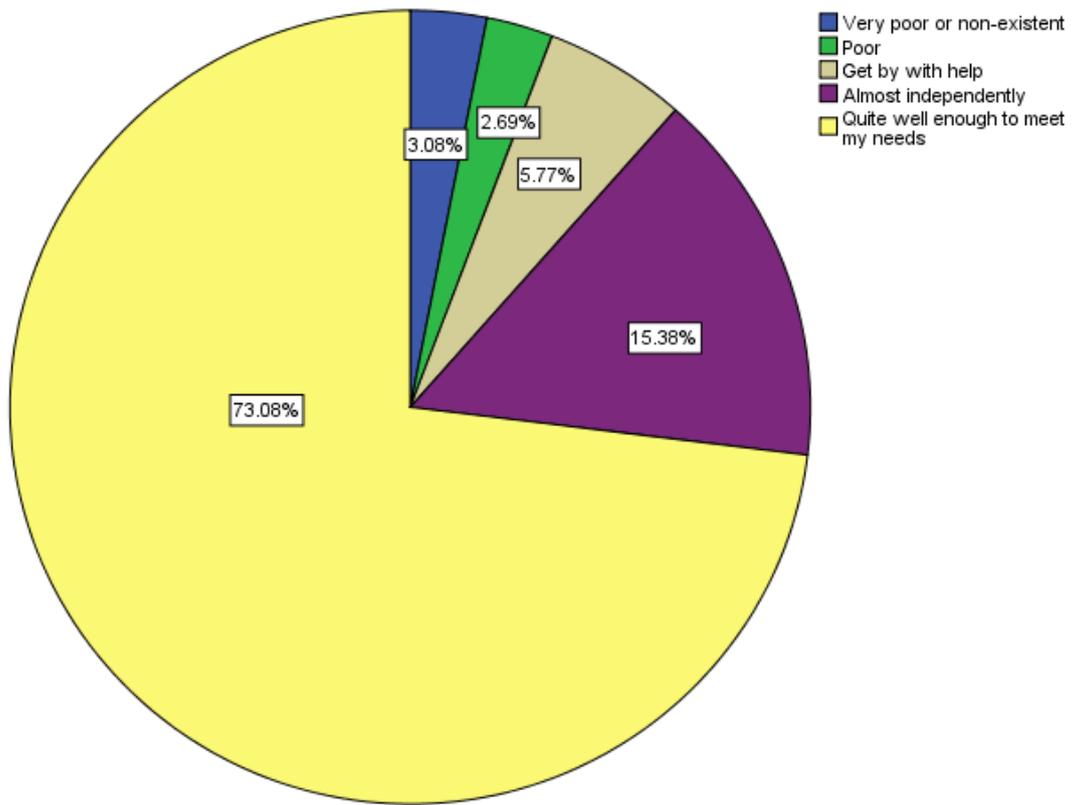


Figure 9: Skills Perception of Using the LMS

Overall, though the use of the university learning system, Learning @ UKZN was large and by far the majority considered themselves proficient in using the site.

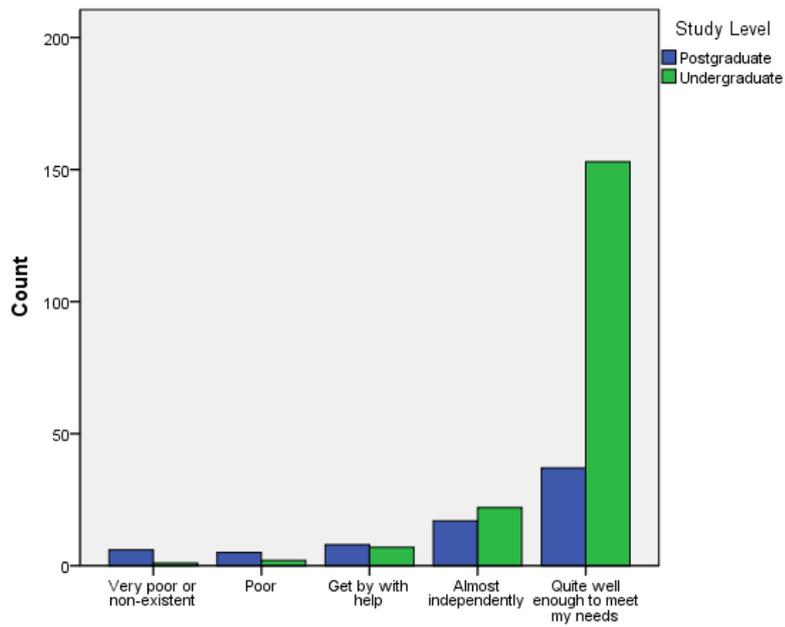


Figure 10: Difference between undergraduate and postgraduate students regarding skills with the LMS

There is however a large difference in the level of comfort with the LMS between undergraduate and postgraduate students which can be seen in Figure 10.

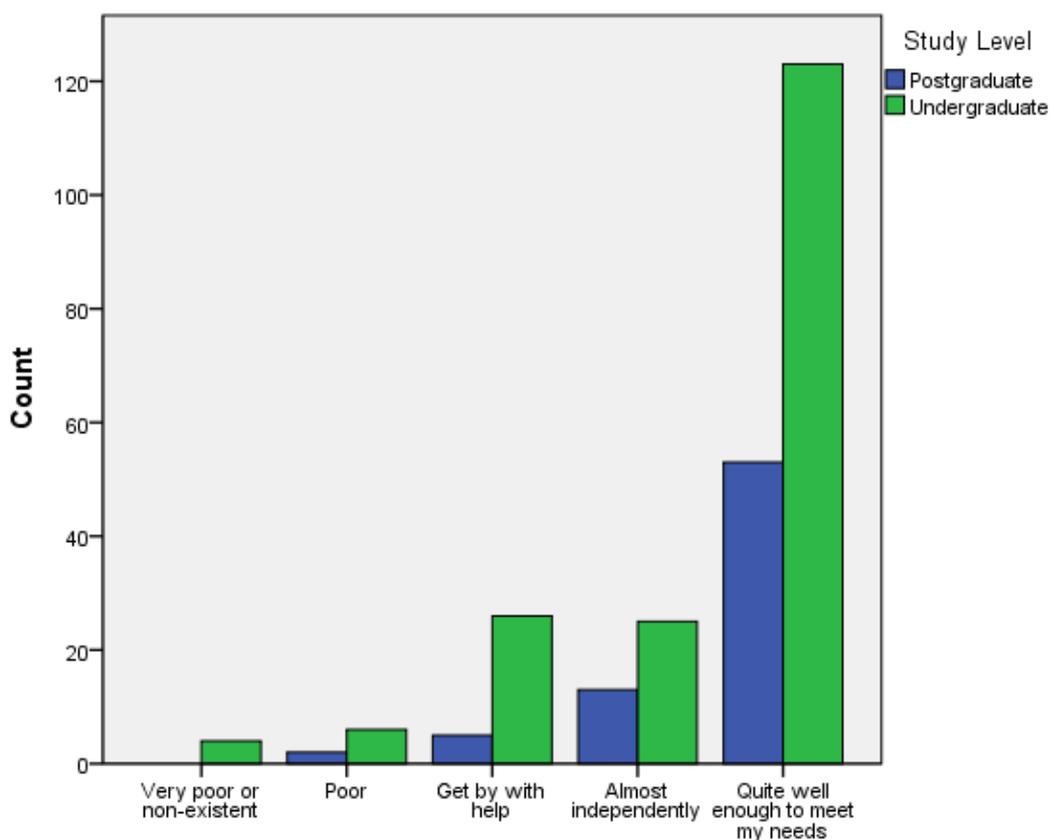


Figure 11: Difference between undergraduate and postgraduate students regarding use of the Library website

In contrast however to the postgraduate engagement with the LMS, Figure 11 shows that this group of students are far more comfortable using the library website.

### Value of Technology in Learning

Respondents were asked how they felt that technology benefitted them in various elements of their academic work at the University. The questions were answered using a Likert scale with 1 being “Not at all” and 5 being, “A great deal”. The questions ranged from the effect on administrative tasks through to the effect on learning and measured responses to 24 different areas and the results are collated in Table 1.

	A Great Deal	A Fair Amount	Great and Fair	A Bit	Not Much	Not at all
Gives me access to a variety of sources	85.1	11.1	96.2	3.1	0.8	0
Helps me do my work faster	73.3	17.2	90.5	6.5	2.7	0.4
Extends learning beyond the classroom	72	19.2	91.2	6.5	1.9	0.4
Makes it easy to track my academic progress	71	21	92	4.6	1.9	1.5
Makes it easier to get help when I need it	67.4	23.6	91	6.6	1.2	1.2
Is an efficient way to store examples of my work	66.8	21.2	88	9.7	1.5	0.8
Enables me to produce higher quality work	65.6	26	91.6	6.9	1.1	0.4
Makes learning more creative	61.7	24.9	86.6	9.6	3.8	0
Makes me feel more connected to what is going on at the University	61	26.6	87.6	8.9	1.9	1.5
Makes university easier	59.2	30.2	89.4	6.9	3.1	0.8
Gives me access to experts in my field	58.3	23.9	82.2	13.9	2.7	1.2
Makes learning more fun	56.2	27.1	83.3	13.2	2.7	0.8
Allows me to take control of my own learning	55.4	30.6	86	11.2	1.9	0.8
Better prepares me for entering the workforce	55	29.2	84.2	11.9	3.5	0.4
Makes me feel connected to lecturers/supervisors and other staff	50.4	23.1	73.5	15.4	9.2	1.9
Elevates level of teaching	50.2	29	79.2	15.4	4.6	0.8
Simplifies administration activities	50	26.7	76.7	13.7	5.7	3.8
Makes coursework/lectures more engaging	49.6	28.8	78.4	14.2	6.2	1.2
Helps me know how I am doing in a course	48.5	23.3	71.8	14.1	6.9	7.3
Helps me feel connected to other students	46.7	25.9	72.6	18.1	6.6	2.7
Helps me think outside the box	46.7	30.9	77.6	17.4	3.9	1.2
Enables me to reach my true academic potential	45.4	32.7	78.1	18.1	20.3	1.5
Makes my academic experience more individualised/personalises curriculum	45.4	27.7	73.1	18.8	5.8	2.3
Makes classes more relevant to real life	43.3	30.3	73.6	17.6	7.7	1.1

**Table 1: Benefits of Technology on various elements of the academic experience**

It is important to note that in all 24 areas the selection of “A Great Deal” represents the most chosen and that the combined total of “A Great Deal” and “A Fair Amount”

With respect to elements such as “Making course work/lectures more engaging” and “Making learning more creative, it is necessary to note the TPACK framework, described well by Koehler and Mishra (2009), who state “At the heart of good teaching with technology are three core components: content, pedagogy, and technology, plus the relationships among and between them. The interactions between and among the three components, playing out differently across diverse contexts, account for the wide variations seen in the extent and quality of educational technology integration.”<sup>3</sup>

The framework presented visually in **Error! Reference source not found.** Figure 12 provides for the fact that technology does not stand in isolation when used in teaching, but the teaching is a union of technology, pedagogy and domain knowledge.

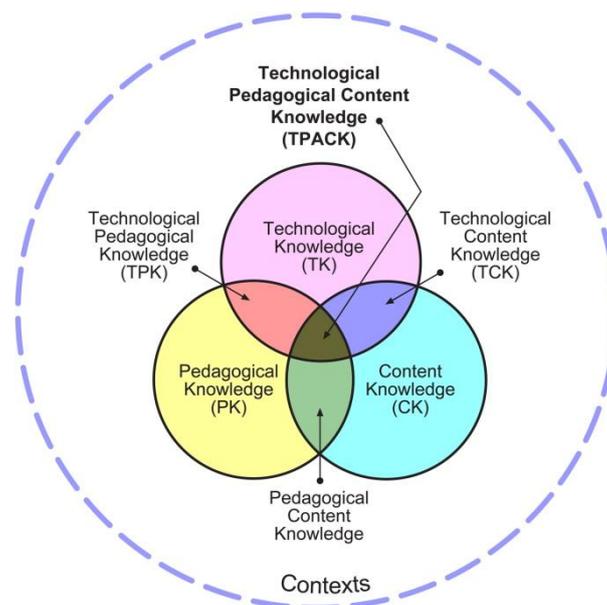


Figure 12: The TPACK Framework - Technology, Pedagogy and Knowledge

Pedagogy involving, for example, the making of classes relevant to real life, involves notions such as problem based learning and authentic tasks. These go to course design and while technology can be used and depending on design, can even enhance it, the development is from the lecturer and not the technology.

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<sup>3</sup> Koehler & Mishra, 2009, p. 63

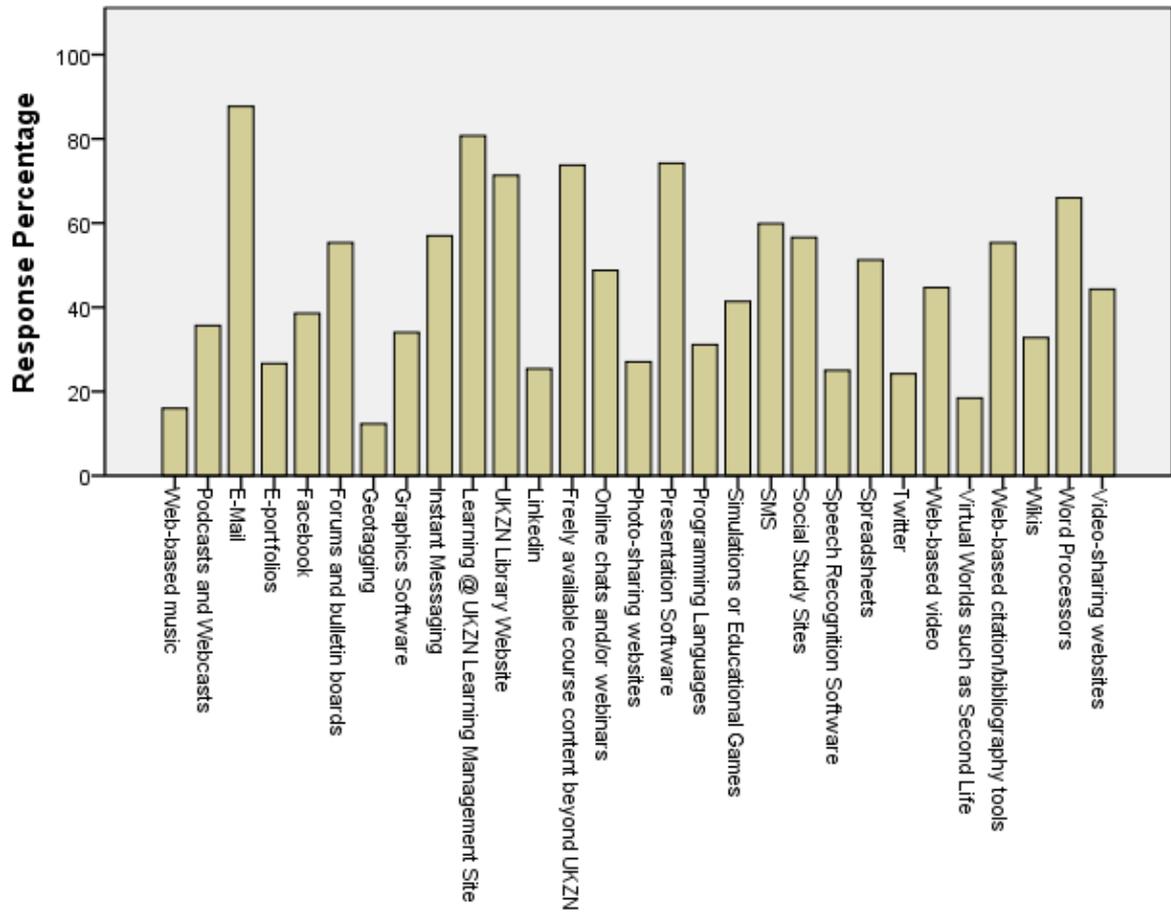


Figure 13: Technology Students Wish Lecturers Used More Often

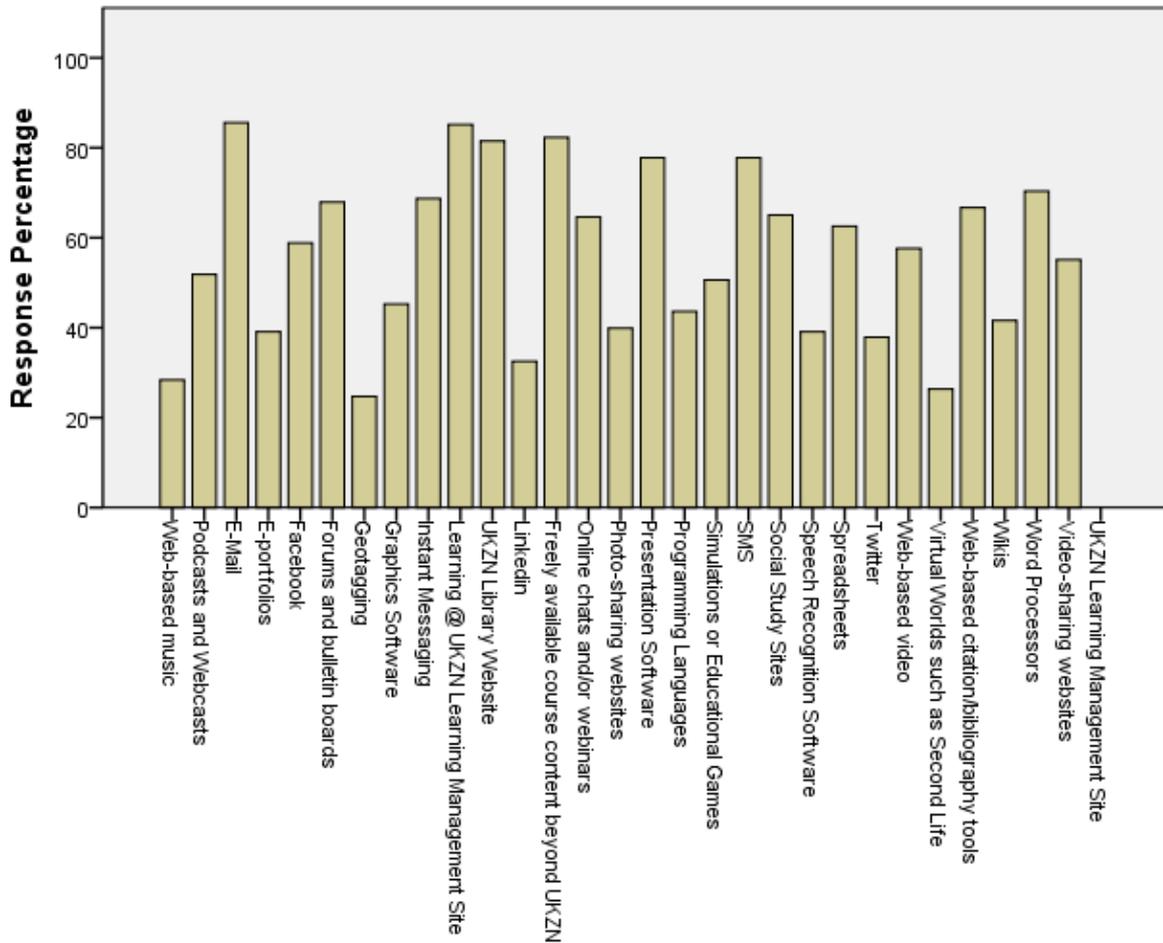


Figure 14: Technology Students Wish the University Used More Often

There is a great deal of overlap between the responses in the two graphs In Figures 13 and 14, with none of the choices in excess of 50% being unique to the question concerning lecturers, but five unique to the question regarding the university. These unique selections were:

- Podcasts and Webcasts
- Facebook
- Online chats and/or webinars
- Web-based video
- Video-sharing websites

That Facebook does not appear in the choices regarding lecturers, but does in the choices for the university, I assume, must be that students would like information regarding the university itself available through Facebook, but do not want to much of an intrusion in there Facebook social life from lecturers. What is apparent from the selections though is that student’s choices to a large extent are of communication channels, such as SMS, e-mail and instant messaging.

Of significance, too, is the desire expressed that students would like Learning @ UKZN be used more widely.

By a significant margin, students consider that e-mail is very valuable to their academic success.

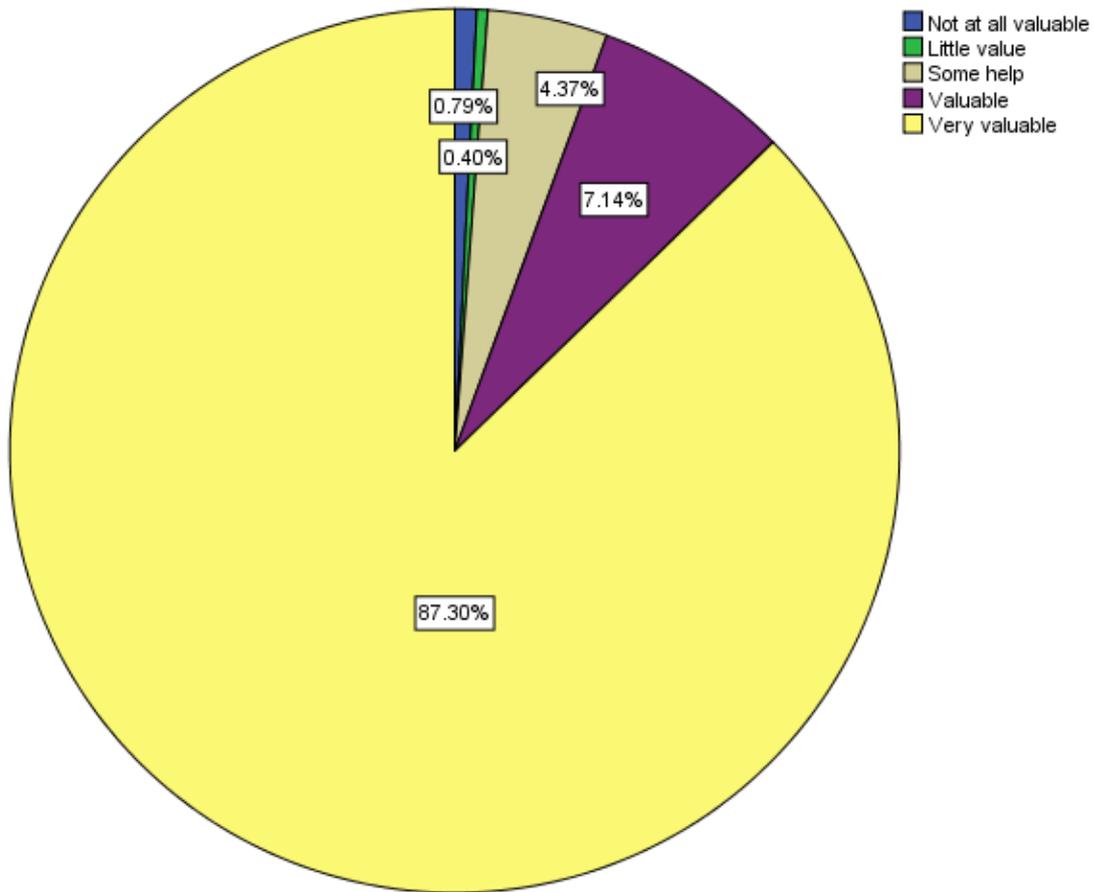


Figure 15: Value of email to academic success

This is followed by some distance by Learning @ UKZN, where the perception of being very valuable was almost 20% lower than e-mail. It is necessary to recall the high percentage of students that wished lecturers and the university would use Learning @ UKZN more. This indicates that students seem to feel that while the LMS is significant in academic success, it is underutilised.

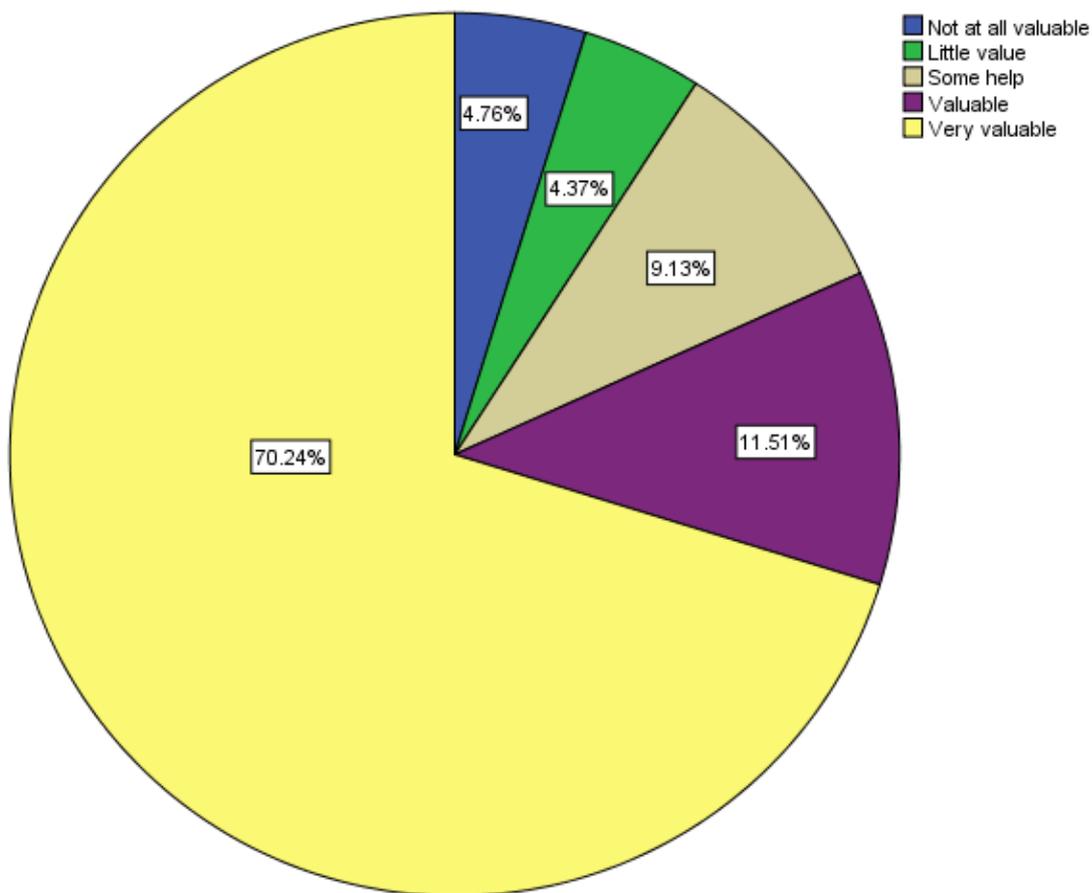


Figure 16: Value of Learning @ UKZN to academic success

These were followed by the library website (66.1% very valuable), word processors (57.4% very valuable) and freely available course content beyond UKZN (53.4% very valuable). No other technology or software returned more than 50% as very valuable.

## Results

1. The rapid migration to smart phones is evidenced in increased usage, rising from 36.4% to 62.5 % of the student population.
2. Device preference is currently dominated by Blackberry (50%), followed by Android (17%).
3. Campus wireless facilities have become firmly embedded in the student experience. Awareness of wireless facilities has doubled since 2012, and awareness is now matched by use.
4. Students have access to a wide range of equipment outside of the university; significantly over 75% have access to a laptop. This is an increase from 50% in 2010.
5. 51% currently make use of mobile access to Learning @UKZN.

6. 73% feel proficient in the use of the learning management system. The remaining 27% feel less than proficient, indicating a need for student training, supported by the high value placed on Learning@UKZN as critical to academic success.
7. The top three values attached to technology reflect student needs: access to information sources; faster compliance with academic work requirements, and - significantly for future planning – extension of learning beyond the classroom.
8. The top ranking technologies which students wish lectures would use more often - e-mail and Learning@UKZN –are ubiquitously available, there are no hindrances to their usage. The expressed need for essential communication suggests rather, a faster uptake by students than by staff of technologies that support eLearning.
9. Second tier ranking of technologies which students wish lectures would use more often include predictable responses around the use of presentation software. Significantly, greater use of the library website is required, as well as the use of course content available beyond UKZN. This suggests increased value placed on independent learning outside of the classroom.
10. Amongst the technologies which students wished the university used more often, are podcasts and webcasts, Facebook, online chats, web-based video and video-sharing websites.
11. E–mail is most highly valued as critical to student academic success (87%), followed by Learning@UKZN (70%).

## Conclusions

1. The 2012 mobile usage survey reveals a strong desire for greater communication between students and lecturers and the university. E-mail communication is most highly valued in achieving academic success, and undergraduate students are largely comfortable with their skills in this area.
2. The requirement expressed by students for greater usage of communication tools by lecturers, primarily e-mail and Learning@UKZN, provides adequate motivation to address this need with Higher Education Training and Development (HETD) in the development of staff induction modules.
3. Learning@UKZN is the second most highly valued technology in achieving student success. This finding indicates the need to focus on improved student proficiency. Student Lab training programmes on basic computer literacy are planned for 2013, and discussions are underway to include the use of Learning@UKZN.
4. Greater scope exists to improve IT literacy skills in the postgraduate cohort, especially where the students are late returners to tertiary education and lacking exposure to computers. Colleges of Education and Health Sciences have previously confirmed this need, and will be targeted in 2013.
5. Similar surveys are planned annually in future, and should interrogate more closely the information gathered here. Further questions arise around student expectations of Learning @ UKZN, and of the manner in which students perceive that e-mail contributes to their academic success.

6. The interest expressed in external freely available course content, and how can it be more fully utilised in study programmes is of specific interest in the light of the national policy framework for post school education and training. The development of open educational resources (OER's) is now supported at UKZN in the Learning Resource Repository, and student interest in independent learning opportunities confirms the need for internal policy development to define quality assurance, assessment criteria and levels of certification that might be provided freely, or alternatively by the Extended Learning Unit (UEL).

## References

Koehler, Matthew, & Mishra, Punya. (2009). What is Technological Pedagogical Content Knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education*, 9(1), 60-70.

Ogunlesi, Tolu, & Busari, Stephanie. (2012). Seven ways mobile phones have changed lives in Africa. <http://edition.cnn.com/2012/09/13/world/africa/mobile-phones-change-africa/index.html>