

# Implementing a BYOD project

Faculty of Medicine and Health Sciences

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## Context

### Background overview

BYOD (Bring Your Own Device) is defined by Gartner (2013) as "an alternative strategy allowing employees and other users to utilize a personally selected and purchased client device to execute enterprise applications and access data. Typically, it spans smartphones and tablets, but the strategy may also be used for PCs." Although BYOD has been internationally employed since 2009, the faculty's use of BYOD within the e-Learning environment – currently for exams and tests – is unique to the African continent, and therefore lacks a reference point or model to work from, either within the university or within the African context.

### The challenge

The BYOD project was necessitated by the high use of electronic assessments within the faculty, resulting in the demand for Faculty of Medicine and Health Computer Usage Area, also known as GERGA, limited facilities growing exponentially. Large groups of students (300+) needing to complete exams and assessments, have to be split into multiple groups and sessions and kept isolated from each other during exam periods. Furthermore GERGA has to be closed for general use during these periods, disadvantaging the rest of the student body.

### Student overview

Surveys done by GERGA in 2013 gave clear indications that over 80% of the total student body at Tygerberg possessed their own devices, that could be used for BYOD, and of those, more than 70% were strongly in favor of adopting BYOD for electronic assessments. Dr Altern Du Plessis from the Centre for Institutional Research surveyed the first year 2014 student intake and found that 83% of all university first Year students owned BYOD-capable devices, and that 94% felt that using computers was very beneficial to their studies.

## Learning and assessment activities

### The pilot project

BYOD, as an alternative strategy to address the capacity issues of the limited GERGA facilities at Tygerberg Campus, was proposed in late 2012, and introduced as a pilot project in early 2014 under the guidance and direction of ELITAC (E-Learning and Information Technology Advisory Committee).

Since January 2014 all GERGA computers were converted to "thin clients" to introduce students to the concept of working on virtual desktops. The term "thin clients" refers to inexpensive, barebones computer setup that serves as a user interface device in a client-service architecture.

The Tygerberg BYOD system for electronic exams allows 500+ students to use their own devices (tablets or laptops) to connect to a VDI (Virtual Desktop Infrastructure) desktop via a high-speed secure wireless network, and to be connected to a standard and secured environment to complete their exams. (This environment is more secure and stable than the old fixed desktop environment on the GERGA computers and is entirely customizable.)

### Results of the pilot project

Students wishing to use BYOD for exams are required to "register" their devices on the network. (This process takes less than 15 minutes and only needs to be done once.) Between 30 and 80 students used their own devices per exam. Students using the BYOD system, complete their exams in an environment identical and concurrently to those of GERGA computers, thereby reducing the need for multiple sessions for one exam using GERGA alone.



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A temporary contract post for a BYOD Liaison officer was created in June 2014. This position works with the three role players in BYOD: Departments, Students and the Exam Office. This post's primary task is to manage the adoption of BYOD at the Faculty, assist students in the setup and use of their devices in BYOD, and scheduling and allocating students into BYOD and non-BYOD groups for exams.

The BYOD system (Virtual Desktops/Secure WiFi) is currently capable of accommodating electronic exams, as well as giving students normal GERGA access with full services via their devices, as well as also making learning materials (podcasts, class notes) accessible to their device, reducing the need for physical seating in GERGA, as well as reducing the need for printing of notes.

### After the pilot project

GERGA is confident that BYOD has proved itself during the pilot study to be an acceptable and cost-effective method of doing electronic exams and assessments, that the system exceeds the current standards of security and stability within the university for electronic exams, and addresses the capacity challenges of GERGA to accommodate the growing number of electronic exams and increased intake of undergraduate students.

All new students in the 2015 intake was informed that the Faculty expects that they acquire a BYOD-capable device (minimum specification list as well as some suitable makes/models is available) before they commence their studies in February 2015. It was also communicated to the potential student that failure to have a BYOD-capable device will not preclude them from being accepted to study at Tygerberg.

All undergraduate students should indicate their "BYOD status" (do they own a BYOD device and can use it for BYOD exams) during their e-registration (online) at the beginning of each year. This demographic data should be included in the e-registration process and should not be regarded as a general survey, where strict compliance is not required. This data will be used to allocate students to the appropriate groups for completing electronic exams in a non-BYOD area (GERGA) and a BYOD area (5th Floor Exam room). Students would be required to declare changes in their BYOD status during the year to allow reallocation to the

appropriate exam group.

### General Challenges

Departments and students are generally reluctant or sceptical about adopting BYOD as an alternative strategy at Tygerberg Campus. Factors that influence adoption are:

- Ignorance of the security of the BYOD system.
- Concerns that students would be penalized should something go wrong with their device during a BYOD exam.
- Perceived additional workload on the personnel in departments to allocate and manage both BYOD and GERGA groups.
- Uncomfortable working conditions in the exam room.

### Conclusion

The BYOD Strategy dovetails fully into the ICT strategy of the Faculty of Medicine and Health Sciences and overarching ICT strategy of the Stellenbosch University, and is regarded as an integral part of the Faculty's e-Learning strategy. BYOD is not a temporary fad but an established and growing strategy that will ensure that the culture of continuous learning within the student body.

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