Using interactive online lessons to facilitate learning in Anatomy: Life Forms and Functions 111

Faculty of Medicine and Health Sciences | Department of Anatomy

Module: Life Forms and Functions 111
Lecturer: Mrs Mandi Alblas aa2@sun.ac.za
Blended Learning Coordinator: Mr Alex Keiller avkeiller@sun.ac.za

Learning activity:
Interactive lessons

Learning technology:
iSpring

Page 1
Context
- Background
- Subject area
- Intended learning outcomes
- Established practice and challenges
- Advantages associated with the integration of technology
- Student overview

Learning and assessment activities
- Educational approach
- Learning and assessment activities

Page 2
- Feedback practices and student self-regulation

Learning environment
- Learning setting
- Content resources
- Technology resources
- Support challenges

Student experience
- Student feedback on the learning experience
- Assessment impact

Page 3
- Assessment impact continues

Page 4
General
- Opportunities
- Reference list

Context

Background

The teaching load on lecturers in the interdisciplinary phase at the Faculty of Medicine and Health Sciences is high due to various factors. The lecturer teaching the Life Forms and Functions 111 module is among this group, which has a large volume of work to cover within the first semester.

A major problem that has been identified is that the first few weeks of the module consist primarily of the revision of the biology content from Grades 8 to 12. This is due to a lack of recall of this secondary school content and the need to establish an equal foundation for all the students in the various undergraduate courses. Since this happens at the start of the module, the responsibility and pressure to get the students on par with the content lie primarily with the lecturer of Life Forms and Functions 111.

Subject area

Interdisciplinary Health Sciences

Intended learning outcomes

The main focus of the learning activities discussed in this case study is to get all students on the same knowledge level before they start their undergraduate courses.

Established practice and challenges

Certain topics within the module consist of joint classes of mainstream and extended degree programme (EDP) students. These classes are presented using primarily acquisition, with some practice, as the modes for both teaching and learning (Laurillard, 2012). Assessments are administered online using SUNLearn. With an average of 350 students to teach, the pressure on the lecturer is immense.

The EDP students had extra classes, in which the inquiry mode of teaching and learning was adopted. The students completed exercises in groups by reading through the notes provided; the group assignments were marked by the lecturer, with assistance from Anatomy postgraduate students.

Even though online assessment feedback was available immediately, feedback on the group assignments was not, as the assignments had to be marked manually. This increased the pressure on the lecturer and delayed the learning process of the EDP students.

Advantages associated with the integration of technology

The Shareable Content Object Reference Model, in this case, iSpring, refers to a software application that is used for online teaching and learning. iSpring allows lecturers to convert their PowerPoint slides into interactive lessons with quizzes, videos and images. iSpring lessons can be set in such a way as to allow the lessons to adapt to the students' level of understanding as opposed to the students trying to keep up with the lessons. When uploaded to a learning management system, such as SUNLearn, iSpring lessons also generate detailed reports of the student interactions with the lessons.

Previously, the EDP students worked in groups on assignments that covered content, finding the answers in the content handouts that they received in class. By adding the use of technology and thus enabling the students to do these assignments online, the students are now able to receive feedback and marks immediately, and review their submissions immediately.

Student overview

The Life Forms and Functions 111 module students come from the Medicine, Physiotherapy and Human Nutrition first-year classes. The student group concerned consisted of 366 mainstream programme students and 44 EDP students.

Learning and assessment activities

Educational approach

Three ways of learning (Laurillard, 2012) were identified: acquisition, where learners read, listen to or watch an explanation of their teachers' model actions; inquiry, where learners are prompted to investigate resources that reflect the concepts and ideas being taught; and practice, where learners use their developing concepts to improve their actions. These three ways of learning were applied to understand the way in which the students interacted with the learning technologies in this module.

Learning and assessment activities

Four iSpring lessons, one for every week or topic covered in class, were

Using interactive online lessons to facilitate learning in Anatomy: Life Forms and Functions 111

Faculty of Medicine and Health Sciences | Department of Anatomy

2

Module: Life Forms and Functions 111
Lecturer: Mrs Mandi Alblas aa2@sun.ac.za
Blended Learning Coordinator: Mr Alex Keiller avkeiller@sun.ac.za

Learning activity:
Interactive lessons

Learning technology:
iSpring

Page 1
Context
- Background
- Subject area
- Intended learning outcomes
- Established practice and challenges
- Advantages associated with the integration of technology
- Student overview

Learning and assessment activities
- Educational approach
- Learning and assessment activities

Page 2
- Feedback practices and student self-regulation

Learning environment
- Learning setting
- Content resources
- Technology resources
- Support challenges

Student experience
- Student feedback on the learning experience
- Assessment impact

Page 3
- Assessment impact continues

Page 4
General
- Opportunities
- Reference list

created as self-study materials to assist the students. Each iSpring lesson was made available after the lecture. The first four lessons were conducted as a pilot study, with the intention of rolling the technology out to the module on a larger scale, depending on the outcome of the initiative. The initial iSpring lesson (Cytology) was made available to the entire class and the three other lessons (Organismic Kingdoms, Embryology and Histology of Primary Tissue) were made available only to the EDP students.

No availability restrictions were placed on any of the lesson activities, which included an unlimited number of attempts. The students could pause the lessons and return to them at a later stage.

Feedback practices and student self-regulation

Previously, the students had to wait a week before they received any kind of feedback. With the iSpring lessons, the students received feedback on their activities immediately. They could implement the feedback immediately and re-attempt the lessons. The lessons were created as self-study opportunities and therefore did not count towards the students' module marks.

Learning environment

Learning setting

Learning took place online on SUNLearn. The iSpring lessons were made available to the students at the start of a new topic. The students completed their lessons in their own time over a predetermined period.

Content resources

iSpring allows content slides to be added to the iSpring lessons. Students can master the content and then immediately move on to the assessment phase of the lesson. Content can be added in the form of voice notes, text, videos and links to external webpages.

The students were also provided with diagrams in which they could identify the location of cells and important philological aspects more easily.

Technology resources

iSpring, part of Microsoft PowerPoint, was the main technology resource.

Support challenges

The need for assistance with the first lesson was greater than the lecturer anticipated. She therefore decided to note and address these issues in future opportunities of this nature for the full class, with further analysis of the initiative in the smaller EDP group. Since the EDP class consisted only of 44 students, any queries or problems could be managed more easily.

Student experience

Student feedback on the learning experience

No formal feedback was obtained from the students but the lecturer did receive numerous verbal requests for more of these types of activities.

Assessment impact

Most of the students attempted and completed the first lesson activity. What was encouraging was the fact that some students had made multiple attempts and had used the iSpring lesson as a means of studying for the early assessment quiz in March. Even though this was the only iSpring lesson that the mainstream students had, their feedback to the lecturer requested more interactive self-study lessons. Out of the 387 students who had access to this iSpring lesson, 374 completed their first attempt. There were only five incomplete attempts and eight students who did not attempt the iSpring lesson.

Using interactive online lessons to facilitate learning in Anatomy: Life Forms and Functions 111

Faculty of Medicine and Health Sciences | Department of Anatomy

Module: Life Forms and Functions 111
Lecturer: Mrs Mandi Alblas aa2@sun.ac.za
Blended Learning Coordinator: Mr Alex Keiller avkeiller@sun.ac.za

Learning activity:
Interactive lessons

Learning technology:
iSpring

Page 1
Context
- Background
- Subject area
- Intended learning outcomes
- Established practice and challenges
- Advantages associated with the integration of technology
- Student overview

Learning and assessment activities
- Educational approach
- Learning and assessment activities

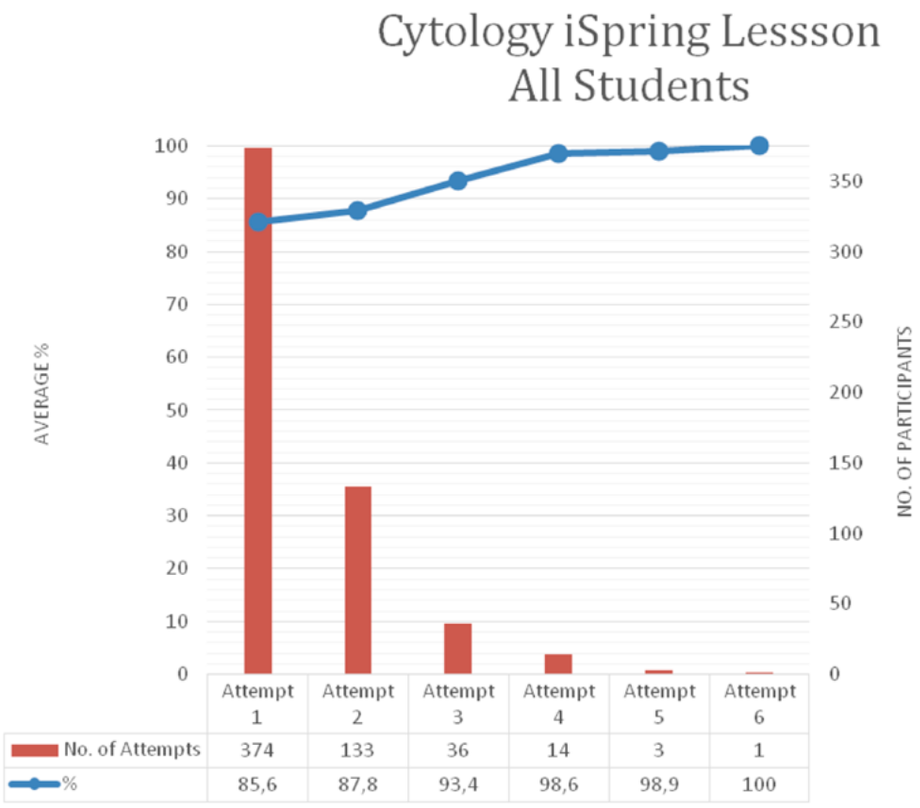
Page 2
- Feedback practices and student self-regulation

Learning environment
- Learning setting
- Content resources
- Technology resources
- Support challenges

Student experience
- Student feedback on the learning experience
- Assessment impact

Page 3
- Assessment impact continues

Page 4
General
- Opportunities
- Reference list



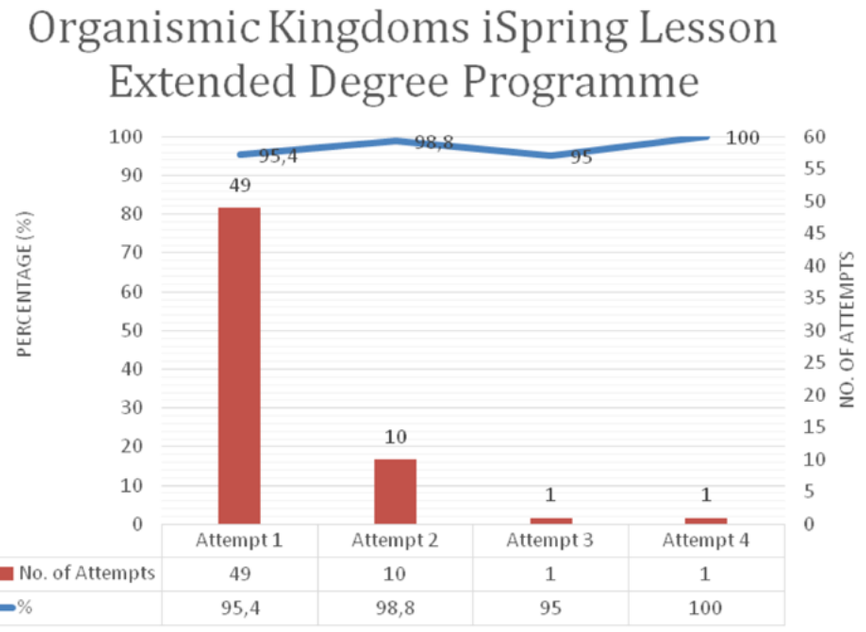
	Attempt 1	Attempt 2	Attempt 3	Attempt 4	Attempt 5	Attempt 6
No. of Attempts	374	133	36	14	3	1
%	85,6	87,8	93,4	98,6	98,9	100

Figure 1: Marks for the Cytology iSpring lesson for all the students

The EDP students also enjoyed the Cytology iSpring interactive lesson and, like the mainstream students, used this as part of their preparation for the early assessment quiz. Although there were no significant changes to the marks of the assessment compared to previous years, the lecturer did notice that the students' understanding of the content had improved. She was also able to view student participation and identify problem areas by the way that the students performed in the lesson.

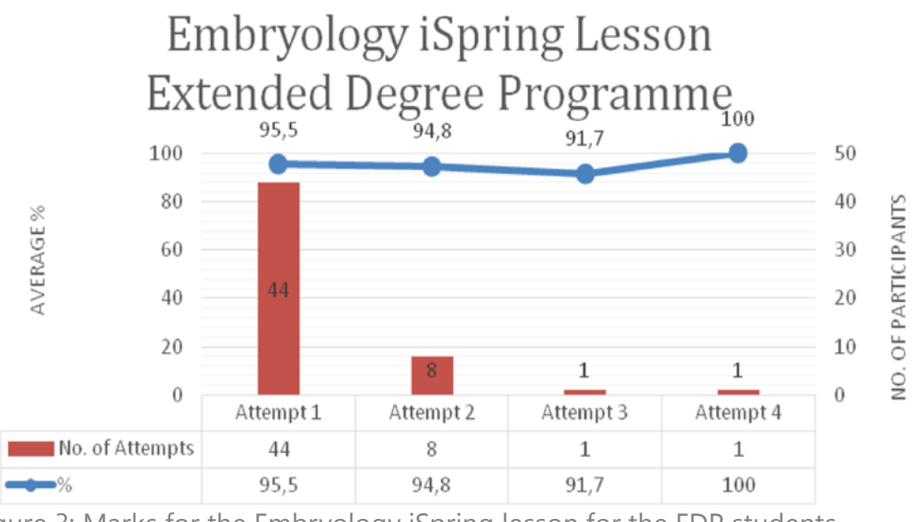
Students were given the opportunity to work in groups, as in previous years. The majority of the EDP students, however, preferred to work on their own and at their own pace.

Although fewer multiple attempts in the Organismic Kingdoms iSpring lesson (Figure 2) were made compared with the Cytology iSpring lesson, it was still encouraging to notice that most of these attempts were made just before the early assessment quiz. All the EDP students completed their first attempts, as can be seen in the figures below.



	Attempt 1	Attempt 2	Attempt 3	Attempt 4
No. of Attempts	49	10	1	1
%	95,4	98,8	95	100

Figure 2: Marks for the Organismic Kingdom iSpring lesson for the EDP students



	Attempt 1	Attempt 2	Attempt 3	Attempt 4
No. of Attempts	44	8	1	1
%	95,5	94,8	91,7	100

Figure 3: Marks for the Embryology iSpring lesson for the EDP students

Using interactive online lessons to facilitate learning in Anatomy: Life Forms and Functions 111

Faculty of Medicine and Health Sciences | Department of Anatomy

Module: Life Forms and Functions 111
Lecturer: Mrs Mandi Alblas aa2@sun.ac.za
Blended Learning Coordinator: Mr Alex Keiller avkeiller@sun.ac.za

Learning activity:
Interactive lessons

Learning technology:
iSpring

Page 1
Context
- Background
- Subject area
- Intended learning outcomes
- Established practice and challenges
- Advantages associated with the integration of technology
- Student overview

Learning and assessment activities
- Educational approach
- Learning and assessment activities

Page 2
- Feedback practices and student self-regulation

Learning environment
- Learning setting
- Content resources
- Technology resources
- Support challenges

Student experience
- Student feedback on the learning experience
- Assessment impact

Page 3
- Assessment impact continues

Page 4
General
- Opportunities
- Reference list

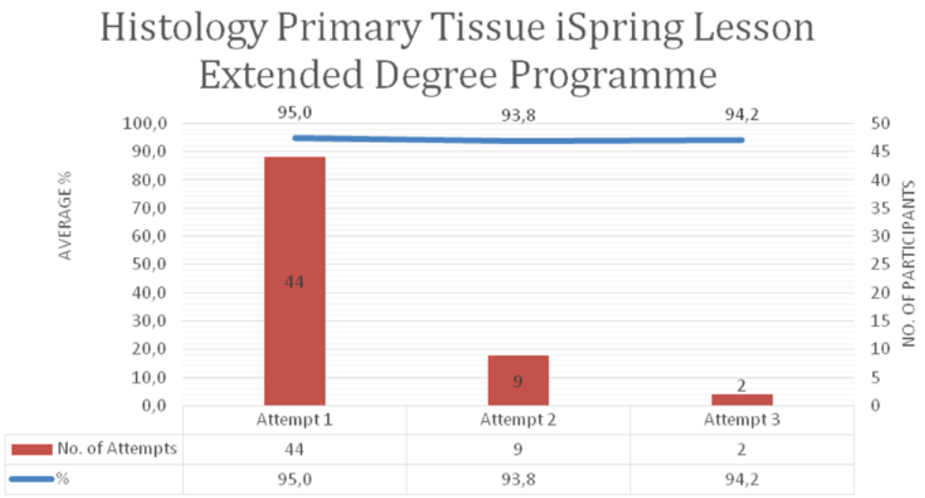


Figure 4: Marks for the Histology Primary Tissue iSpring lesson for the EDP students

General

Opportunities

Since the Department of Anatomy will be renewing its curriculum in 2017, this is still an ideal time to plan and create more content using iSpring lessons. The starting point for this is to use iSpring to create interactive self-study lessons that help students to review the high school content that they need to know for the module.

Reference list

Laurillard, D. 2012. Teaching as a design science: *Building pedagogical patters for learning and technology*. New York: Routledge.