Electronic Management of Assessment – Digital Exams in UK HE 2018

A HeLF Survey Report

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ABOUT THE HEADS OF E-LEARNING FORUM (HELF)

HeLF was established in 2003 as a UK 'network of senior staff in institutions engaged in promoting, supporting and developing technology enhanced learning' (HeLF, 2018). Each UK Higher Education institution can nominate one representative to HeLF which now has over 140 institutional members.

HeLF has three face-to-face meetings each year on a topical eLearning theme. It also has an active mailing list, which is restricted to HeLF members in order to provide a closed forum for debate on current issues.

HeLF acts as 'an advisory body for national and governmental organisations on issues relating to eLearning institutional strategy and implementation'. It is 'proactive in soliciting responses from such bodies and promoting the views of its membership'.

Enabling collaboration on 'the strategic implications of developing and implementing eLearning', HeLF supports 'the processes by which eLearning strategy can be effectively created, and implemented, including advice, support and co-operation between members' (HeLF, 2018).

More information about HeLF and its activities is available at http://www.helf.ac.uk/

HeLF UK HE Report on EMA – Digital Exams 2018

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EXECUTIVE SUMMARY

This report presents the analysis of the Heads of eLearning Forum (HeLF) survey on Electronic Management of Assessment (EMA) Digital Exams in UK Higher Education (HE) in 2018. The key findings from the 56 responses (39% response rate) that illustrate the complexity of this area in universities. are:

Implementation

- Digital exams are only replacing traditional exams in one or two modules in the majority of universities (61%), university wide in just 5% and not at all in 14%.
- Computer classrooms are being used or considered for digital exams by the large majority, 86%. This is nearly double the number using or considering using laptops in large rooms, 45%
- 50% are focusing on university provided hardware, only 13% on BYOD and just over a quarter equally on both.

Change over time

- There is a range of lengths of time in which digital exams have been undertaken. Most universities have been doing digital exams for 1 - 4 years (39%). However, 25% are not doing them or have been doing so for less than a year compared about 20% who have been doing them 5-9 years. A further 14% have 10 years or more of experience.
- There is increasing interest in the use of digital exams but there is little difference between current and future planned use in the type of digital exams. Quizzes are the most widely implemented at present and planned for the future type of digital exam (89%, 83% respectively).
- It is anticipated that there will be increased use of word processing (30%, 47% respectively). The use of computer programs stays low and the use of spreadsheets remains as the lowest.

Drivers and barriers

- Academics are definitely the main driver (77%) for implementing digital exams. Surprisingly, students as the main driver are surprisingly low at 6%.
- Room capacity (44%) is the main barrier followed by managing exam security (23%).

Heads of eLearning

- Nearly a third of Heads of eLearning are greatly involved and nearly 2/3rds have some involvement.
- The majority (73%) is OK with that level of involvement and just over a ¼ would like more (27%).

INTRODUCTION

This report provides an analysis of the Heads of eLearning Forum (HeLF) survey on the provision, drivers and barriers in the use of Electronic Management of Assessment (EMA) in digital examinations in UK Higher Education (HE) in 2018. It also considers the implications for future developments and the impact of digital exams on the role of the Head of eLearning. The report provides a snapshot of current practice and enables an institution to compare itself to the sector.

For clarification the definition of digital exams used for the purpose of the survey is a summative exam taken using technology.

This report is the eighth in a series of surveys of HeLF members that aim to understand and track the changing use of digital technologies in UK HE and their impact on Heads of eLearning. The reports and presentations of earlier surveys on the Electronic Management of Assessment (EMA) 2011 to 2016, Tablet Technologies in 2014, Learning Analytics in 2015 and 2017, Learning Spaces in 2016 and Lecture Capture in 2017 are available on the HeLF website at: http://www.helf.ac.uk

METHODOLOGY

This research on the UK HE levels of implementation and development of digital exams is based upon the perceptions of HeLF members on the situation in their own institution. HeLF members have an overview of eLearning strategy, policy and practice in their institution.

The HeLF membership was surveyed online during April/May 2018. The questions were a mixture of closed multiple-choice/multiple-answer and multiple selection as well as open response type.

All the data has been held anonymously and securely. The results have been analysed using qualitative and quantitative methods.

RESULTS

There were 56 responses from separate institutions, resulting in a response rate of 39% of the total HeLF membership.

The results to each question are given below.

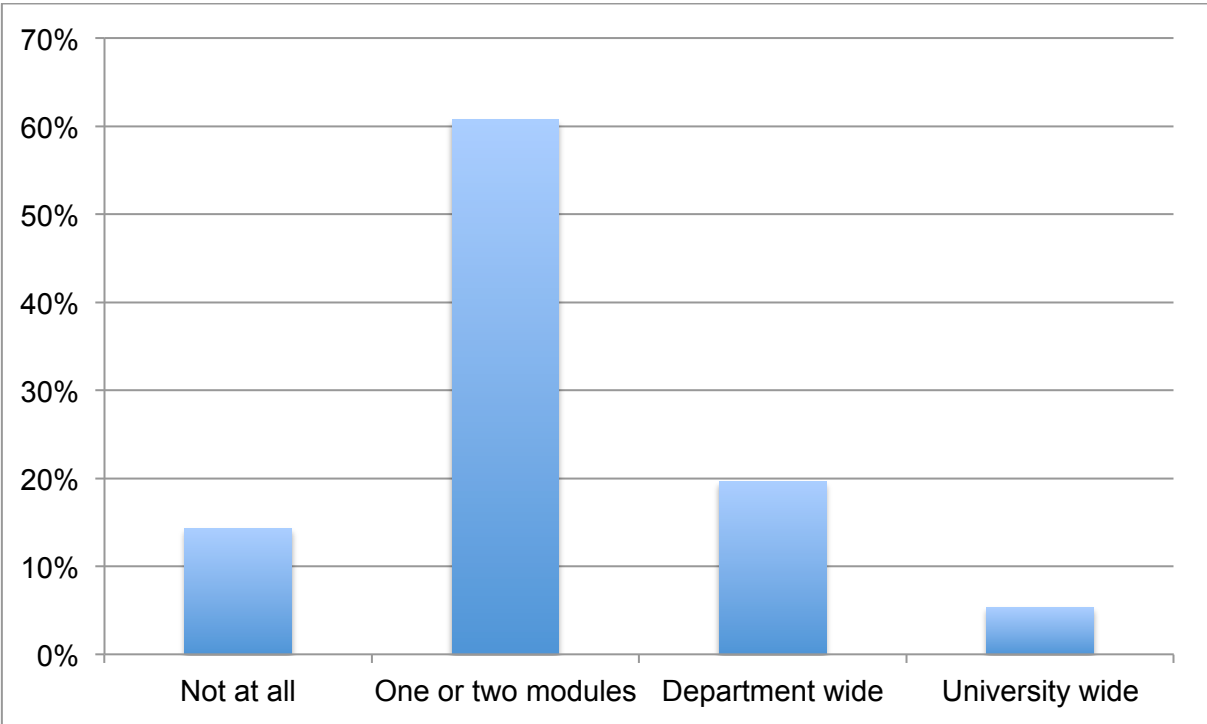EXTENT TO WHICH TRADITIONAL SUMMATIVE EXAMS BEING REPLACED BY DIGITAL EXAMS

Figure 1: To what extent are traditional exams being replaced by digital exams?

	Response – Percentage	Response - Count
Not at all	14%	8
One or two modules	61%	34
Department wide	20%	11
University wide	5%	3
	Answered question	56

Traditional exams are being replaced by digital exams in one or two modules in the majority of universities (61%), university wide in just 5% and not at all in 14%. However, the 34 comments illustrate the complexity of this area in universities.

A range of practice within an institution:

"some programmes have moved to fully digital, others have one or two modules, some not at all, strictly paper-based summative"
"2 departments are almost completely digital and 3 other departments are exploring with 2-3 exams each"

Subject related:

"Computer-marked digital MCQs have been the norm in the Medical Sciences Division for a number of years"
"Some Schools such as Medicine, Life Sciences complete all undergraduate exams online. Other Schools and disciplines have a mixture of online exams and written exams. Schools such as Humanities do not have any online exams".
"As an Arts Institution digital exams are not on our agenda"

Level of study and size of cohort:

"Primarily at level 4 where there are large classes (100-30 students) and where assessment can be undertaken via objective multiple choice questions"

Generally in 1 or 2 modules:

"in reality it is one-or two modules within departments"
"but not on a strategic level yet, due to technical, logistical and human factors (literacy of staff and students), plus costs."

Some universities have increasing interest in implementing digital exams:

"Certain departments are traditional users of digital exams, but we're seeing a year-on-year increase"
"we are now looking at the opportunities digital provides for essay exams which forms the vast majority of summative assessment"
"The plan is to move at an institutional level, but only initial stages"
"We are in pilot phase looking at this with a view to university wide implementation"
"We are currently trialling digital exams summatively and formatively"

Others indicate the barriers:

"We want to look at this but haven't had time or resource"
"We can't scale current practice - not enough PCs or PC rooms and not enough support available"
"Infrastructure and space hinder wider adoption"
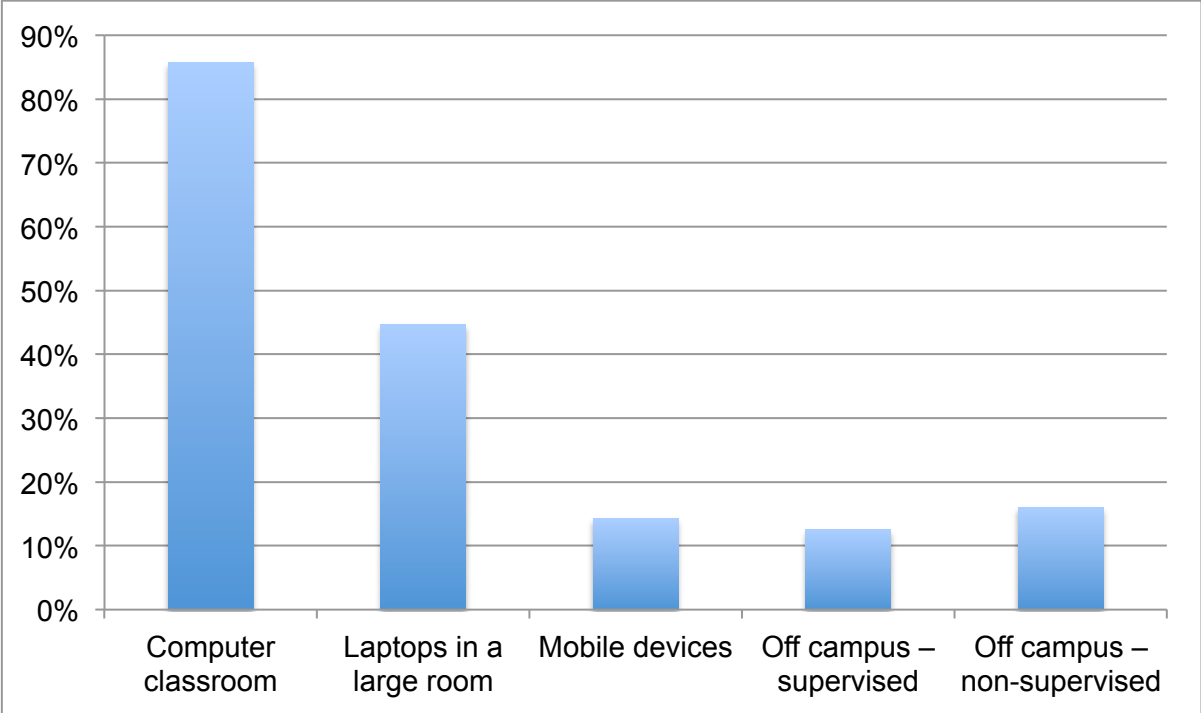
Figure 2: Which of the following are you using/considering for digital exams?

	Response – Percentage	Response - Count
Computer classroom	86%	48
Laptops in a large room	45%	25
Mobile devices	14%	8
Off campus – supervised	13%	7
Off campus – non-supervised	16%	9
	Answered question	56

Computer classrooms are being used or considered for using for digital exams by the large majority (86%). This is nearly double the number using or considering using laptops in large rooms (45%). The use of mobile devices and supervised and non-supervised off campus have similar and lower current or planned usage (14%, 13% and 16% respectively).

There were 14 comments which showed that there are a wide range of different combinations or hardware and location in use or under consideration which include:

"On campus - non-supervised"
"low stakes summative assessment via paper-based OMR forms"
"pilot of BYOD with students own laptops in a flat teaching room"
"Online proctoring for on and off campus"
"off campus and BYOD"
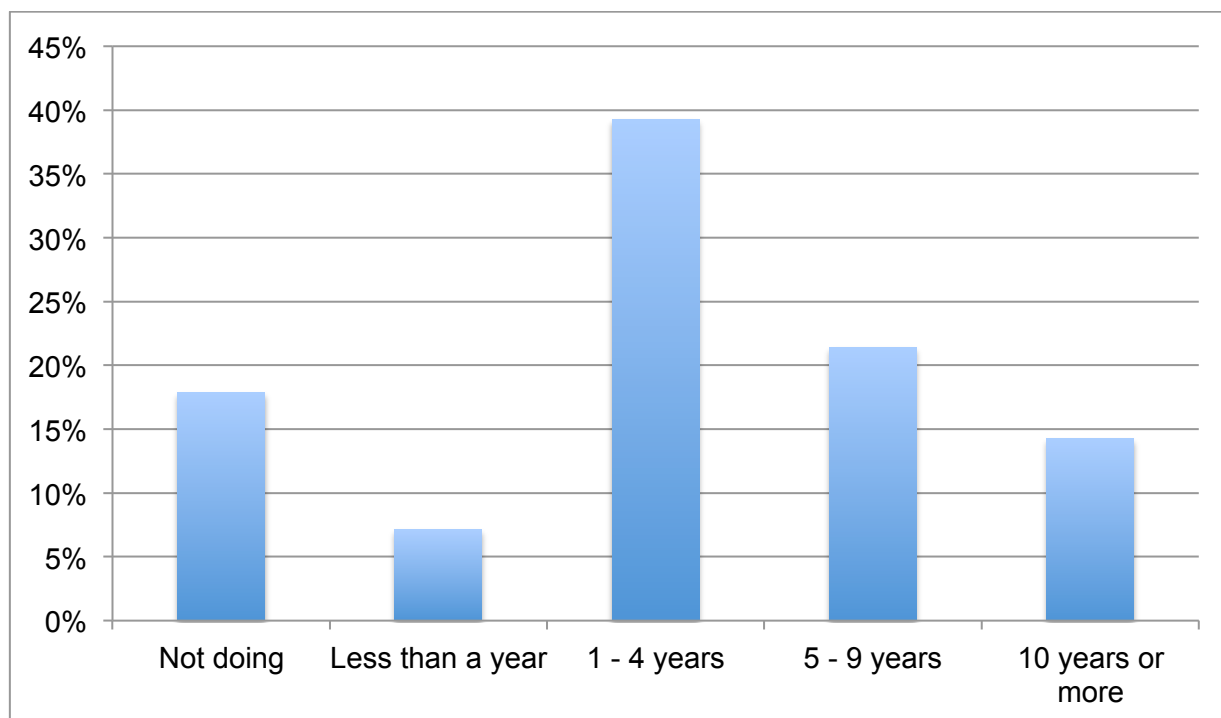
Figure 3: How long have you been doing digital exams?

	Response – Percentage	**Response - Count**
Not doing	18%	10
Less than a year	7%	4
1 - 4 years	39%	22
5 - 9 years	21%	12
10 years or more	14%	8
	Answered question	56

There is a range of lengths of time in which digital exams have been undertaken. The majority of responses (39%) show 1–4 years, but also that a quarter are not doing them or have been doing so for less than a year compared to just over a fifth who have been doing them 5-9 years. A further 14% have 10 years or more of experience.

The comments indicate that it is a complex situation in which digital exams may mainly be undertaken by a particular department or in a particular format eg quizzes

"In Medicine"
"online MCQ exams. Relatively small number but well established practice and well embedded where they are used"
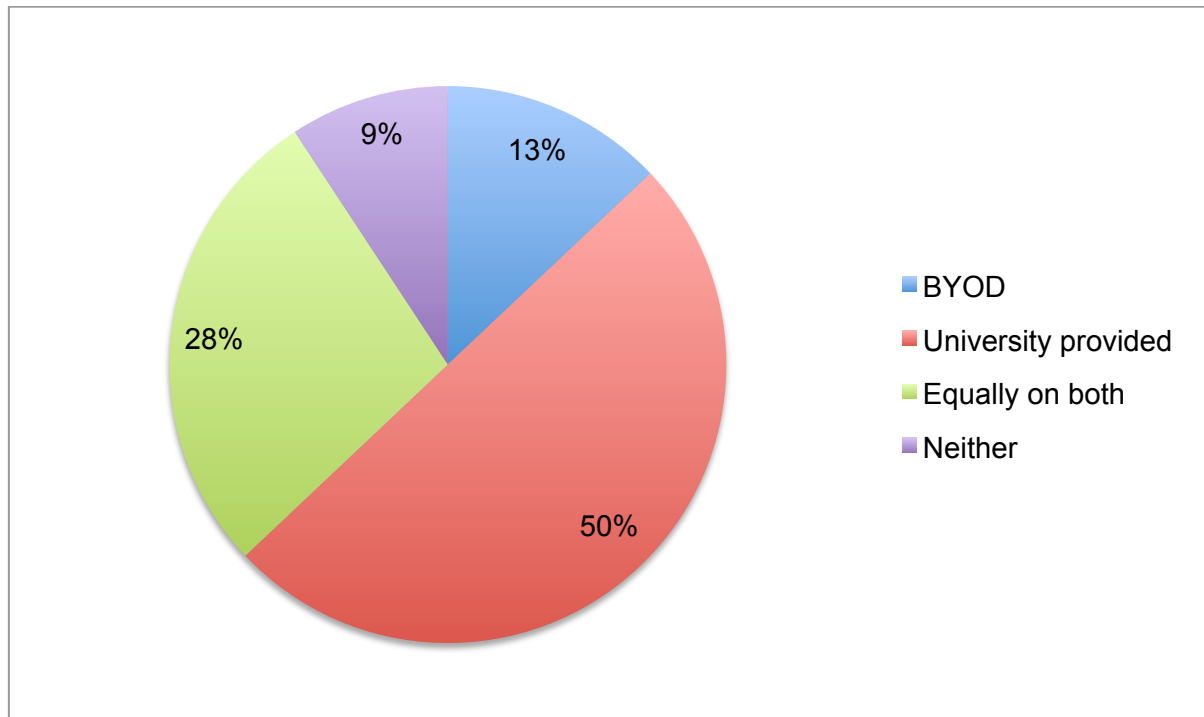*"5-9 years for quizzes Not at all for unseen written exams"*

Figure 4: Are you focusing on Bring Your Own Device (BYOD) or university provided hardware?

	Response – Percentage	Response - Count
BYOD	13%	7
University provided	50%	27
Equally on both	28%	15
Neither	9%	5
	Answered question	54

Half of the universities are focusing on university provided hardware, only 13% on BYOD and just over a quarter equally on both. In order to increase capacity some are looking at external venues and/or BOYD.

The comments show that the decision between university provided and BOYD may depend on the location and type of exam:

> *"Off-campus exams are BYOD. Class tests are in University computer suites"*
> *"All our MCQ type exams are currently in our computer suites"*

Research of one university found:

> *"students are reluctant to use their own devices for university mandated work (e.g. exams)"*

Figure 5: Who are the main drivers for implementing digital exams?

	Response – Percentage	Response - Count
Academics	77%	36
Senior management	17%	8
Students	6%	3
	Answered question	47

Academics are definitely the main driver for implementing digital exams. Students as the main driver are surprisingly low at 6%.

Some of the reasons are:

"to tackle readability of exam scripts"
"lack of physical space"
"Curriculum Transformation (assessing things differently)"
"efficiencies in marking"

The comments also show that in some cases there is a mix of drivers particularly with senior management and academics.
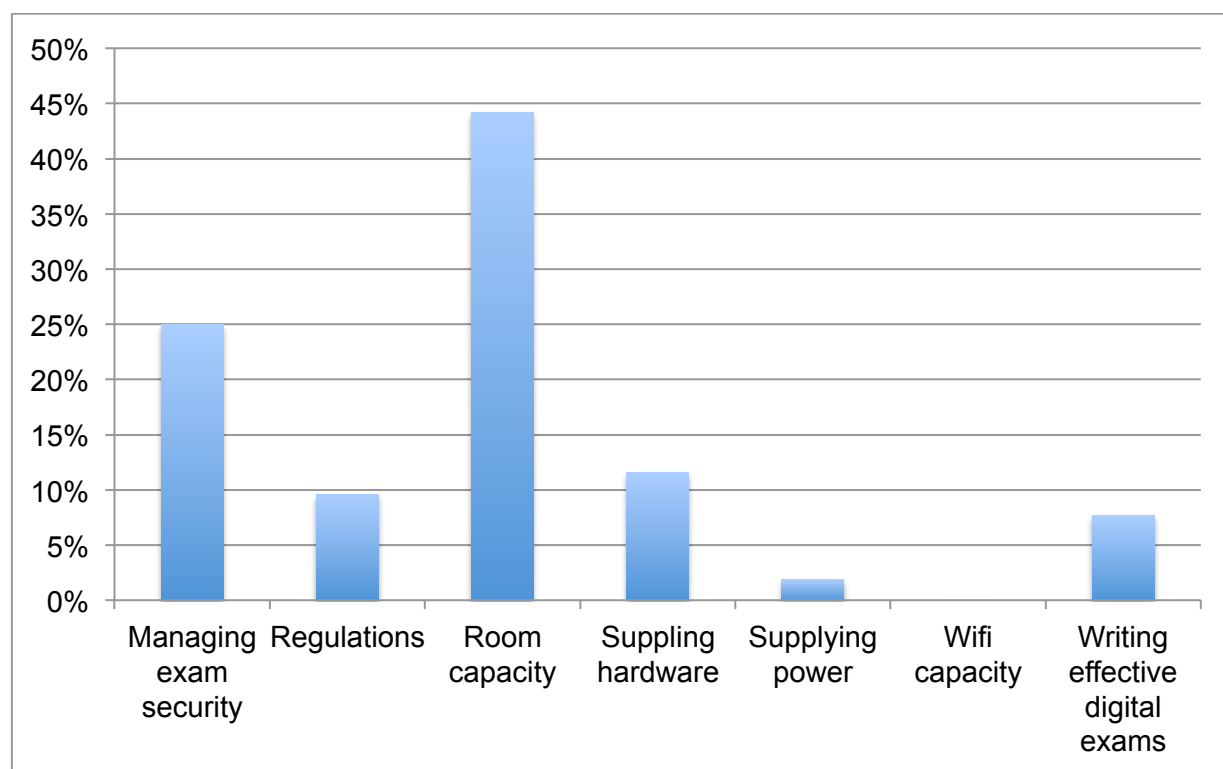
Figure 6: What do you perceive as the biggest barrier?

	Response – Percentage	Response - Count
Managing exam security	25%	13
Regulations	10%	5
Room capacity	44%	23
Supplying hardware	12%	6
Supplying power	2%	1
Wifi capacity	0%	0
Writing effective digital exams	8%	4
	Answered question	52

The biggest barrier is room capacity (44%) followed by managing exam security (25%). Wifi capacity and supplying power are not barriers.

The comments indicated that it's a complex situation and barriers include:

"Infrastructure as a whole."
"A combination of all of the above are barriers for wider adoption of essay based exams being completed digitally."
"Software cost for machines"
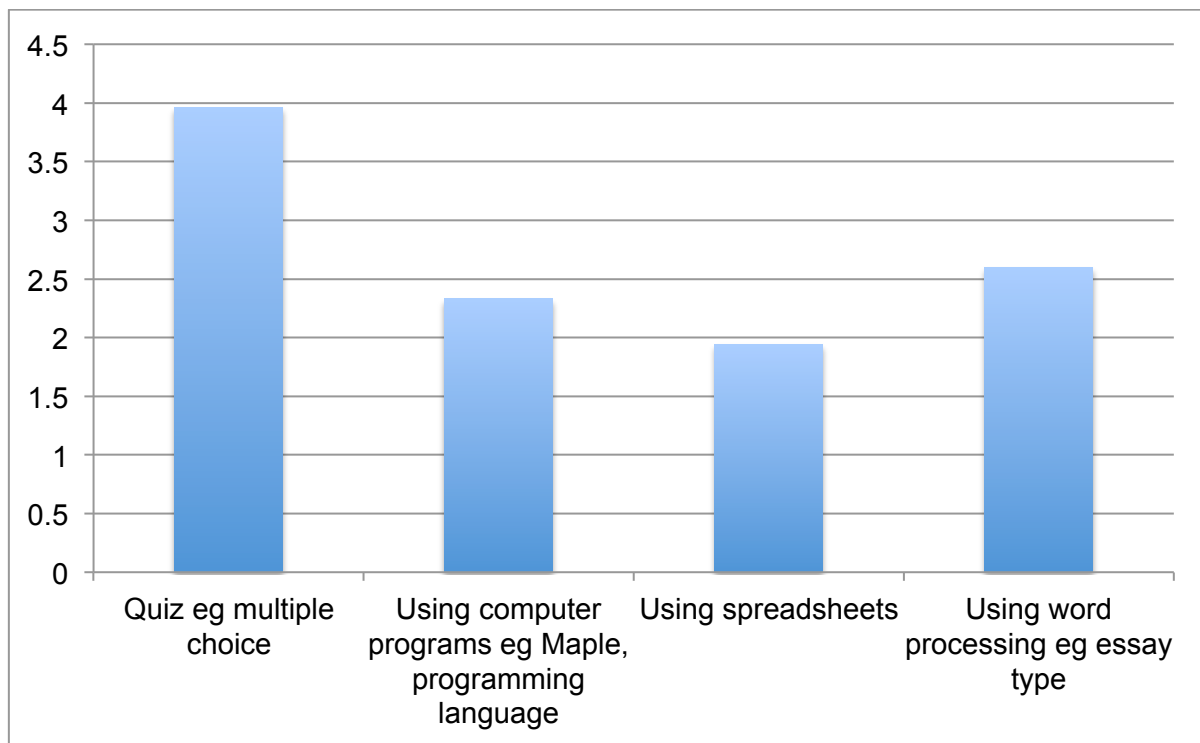
Figure 7: Which types of digital exams are currently implemented most?

	Score
Quiz eg multiple choice	3.96
Using computer programs eg Maple, programming language	2.33
Using spreadsheets	1.94
Using word processing eg essay type	2.6
Answered question	54

For this question HeLF members were asked to rank which type of digital exams are currently implemented in their university with "1" being the most. Quiz exams, such as multiple choice, were ranked 1 by 89% showing that they definitely the most widely used. The highest types ranked 2 were using word processing eg essay type (30%) and using computer programs (25%).

The use of computer programs such as Maple and other programming languages for digital exams is ranked lower and the use of spreadsheets the lowest.
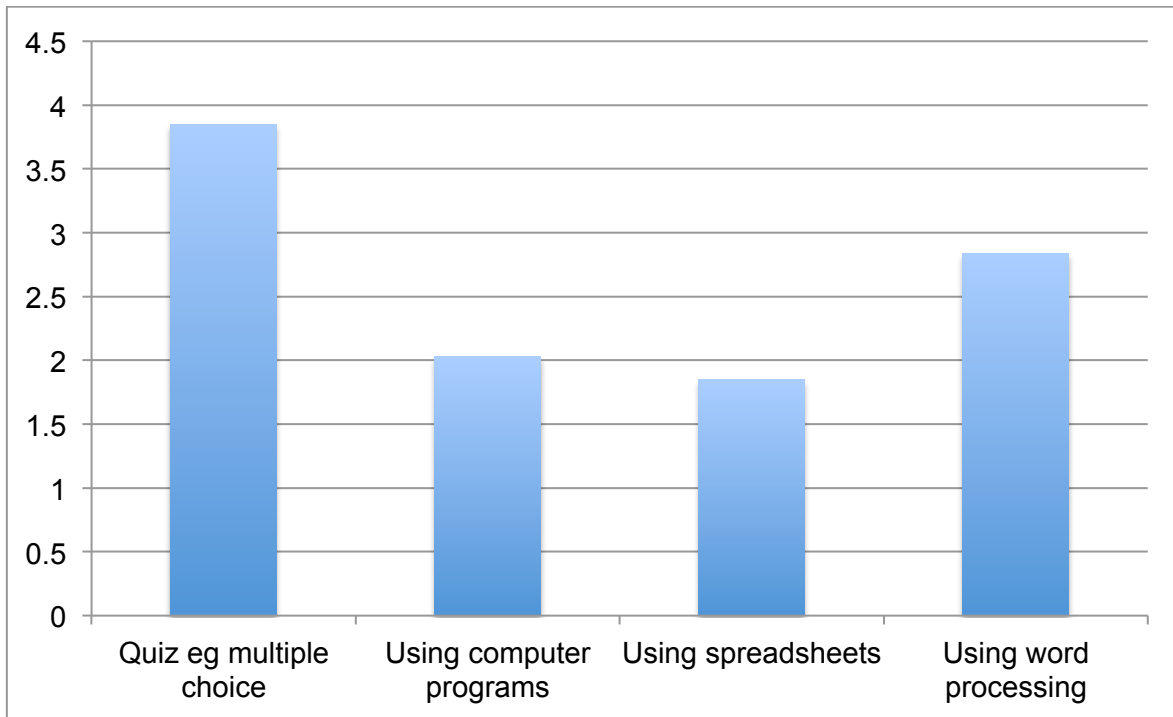
Figure 8: Which types of digital exams are planned for the future most?

	Score
Quiz eg multiple choice	3.85
Using computer programs eg Maple, programming language	2.03
Using spreadsheets	1.85
Using word processing eg essay type	2.84
Answered question	54

For this question HeLF members were asked to rank which type of digital exams are planned for the future in their university with "1" being the most. Quiz exams, such as multiple choice, were ranked 1 by 83% showing that they definitely considered to be the most widely used in future. The highest types ranked 2 were using word processing eg essay type (47%) and using computer programs (27%).

Comparing the results of the types of digital exams which are currently implemented and planned for the future shows that quiz exams remain highly ranked as 1 with 89% and 83% respectively. However, it is anticipated that there will be more use of word processing as it's ranking of 2 increased from 30% to 47%. The use of computer programs remains low and the use of spreadsheets stays as the lowest.
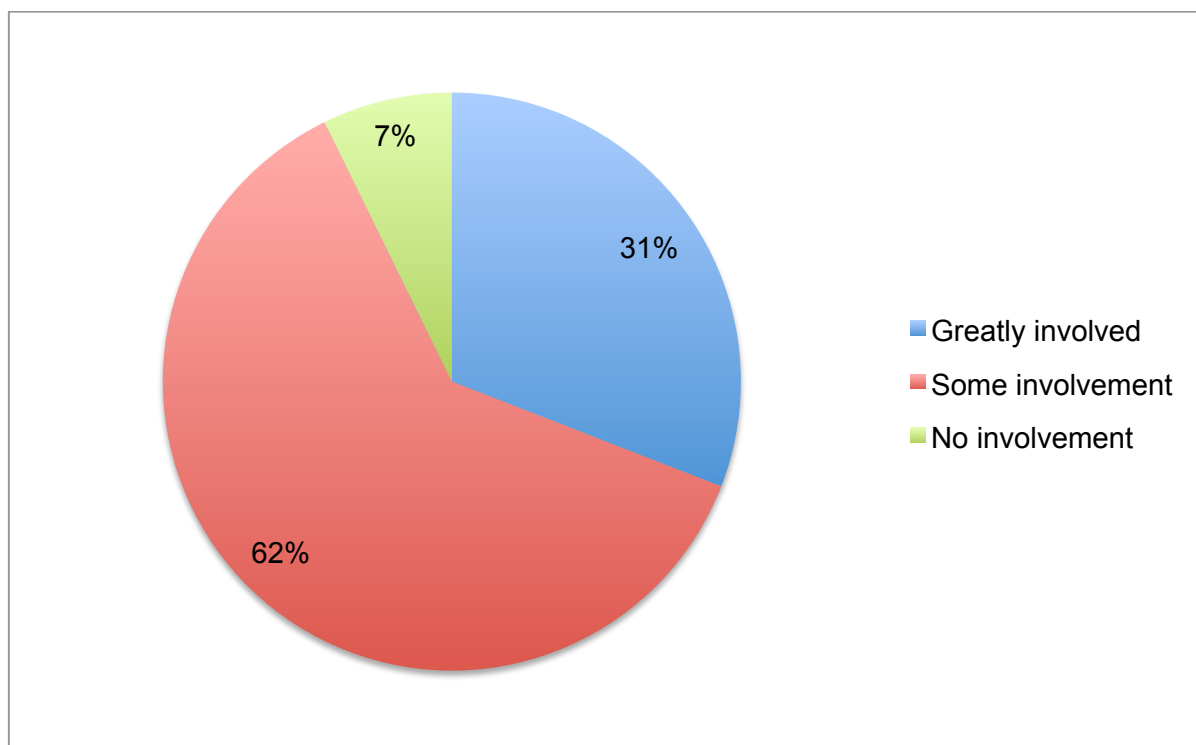
Figure 9: What is your level of involvement as Head of eLearning?

	Response – Percentage	Response - Count
Greatly involved	31%	17
Some involvement	62%	34
No involvement	7%	4
	Answered question	55

Nearly a third of Heads of eLearning are greatly involved and nearly two-thirds have some involvement with digital examinations at their university. There were 17 additional comments and these include those from the third who are already greatly involved:

"I manage the team that design and run digital exams"
"leading process change, implementation, training and support"

Nearly half are expecting increasing levels of involvement in the next couple of years.

"potential new services coming to support this in future"
"At present our level of involvement is low but I anticipate this will change"
"a priority in the future"

Others comment that aspects of digital examinations are outside their remit

"The biggest limitations we have is hardware and space, both of which are outside my remit"
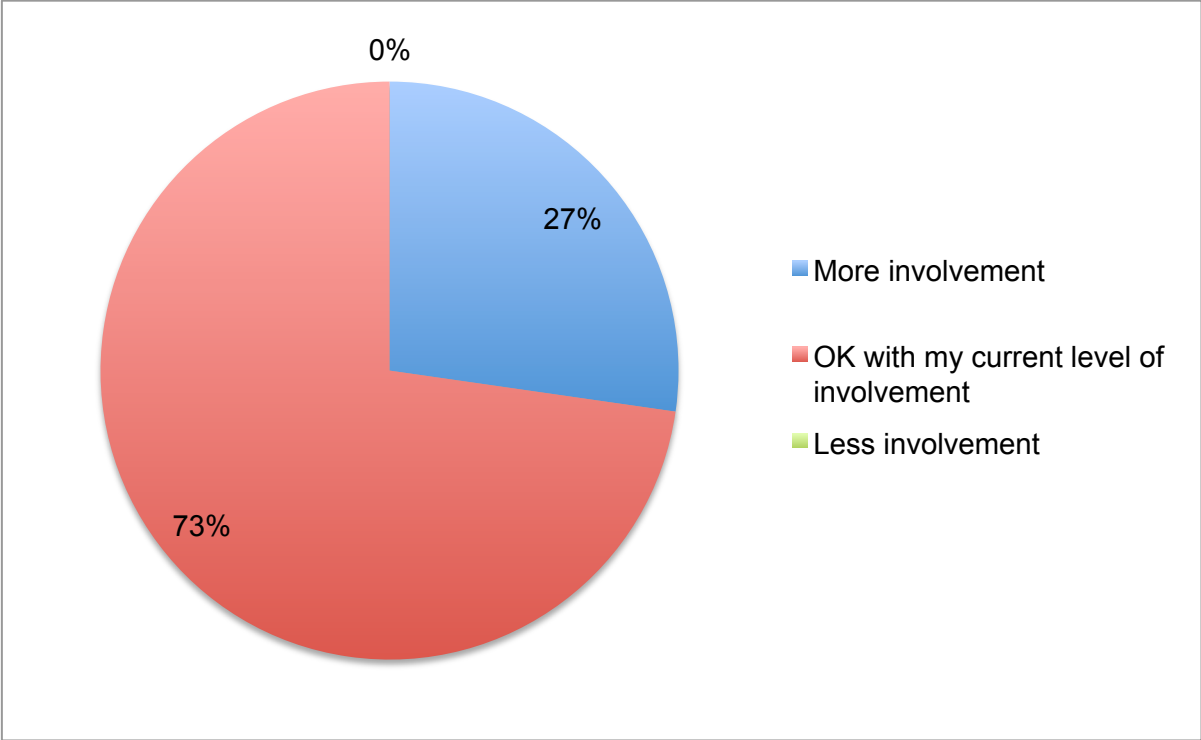
Figure 10: Would you like more involvement?

	Response – Percentage	Response - Count
More involvement	27%	15
OK with my current level of involvement	73%	40
Less involvement	0%	0
	Answered question	55

Nearly three-quarters are OK with their current level of involvement in digital exams. Just over a quarter would like more involvement and no-one wanted less involvement.

The comments show that some HeLF members would like a more strategic focus:

"a clear steer from senior management "
"a co-ordinated project"
"greater academic and senior management buy-in and support"

OTHER SIGNIFICANT DIGITAL EXAMS DEVELOPMENTS

There were 11 responses that provided further information about other significant digital exam developments that were not included in the survey. These comments mainly related to:

Security

"effect of BYOD and a lockdown browser"
"Use of external dedicated digital exams platform"
"Online proctoring for on and off campus"

Health Sciences

"Objective Structured Clinical Examination (OCSIs) "
"practicals captured on video in Nursing"

Accessibility

"A review of assistive technology and accessibility"
"have to be able to find appropriate additional spaces for those that require extra time or rest breaks"

Pedagogy

"a move away from the traditional 3-hour handwritten exam"

LINKS

HeLF members were asked to provide links to any guidelines or policy that they would like to be made available. Some people stated that their guidelines and policy were not publically available.

Here are the 2 links that were provided:

https://elearningyork.wordpress.com/key-areas/vle-exam/

https://www.ucl.ac.uk/srs/academic-manual/documents/annexes_2017_18/chapter_4_annexes_17_18/Annex-4.5.1-Guidelines-for-Conducting-E-Examinations.pdf

CONCLUSION

The use of Electronic Management of Assessment (EMA) Digital Exams in UK Higher Education (HE) in 2018 is a complex area. Digital exams are only replacing traditional exams in one or two modules in the majority of universities (61%), university wide in just 5% and not at all in 14%. However, there is a wide range of practice within institutions with digital exams being used extensively in some departments such as medicine and seldom in others such as humanities. There is also variation according to the size of the cohort and the level of study with more use of quizzes with large cohorts and/or at level 4. There is increasing interest in implementing digital exams, however, this will be generally be using quizzes.

Computer classrooms are being used or considered for using for digital exams by the large majority (86%). This is nearly double the number using or considering using laptops in large rooms, 45%. The use of mobile devices and supervised and non-supervised off campus have similar and lower current or planned usage (14%, 13% and 16% respectively). Half of the universities are focusing on university provided hardware, only 13% on BYOD and just over a quarter equally on both. The rationale for this linked to some of the technical and security issues with implementation.

There is a range of lengths of time in which digital exams have been undertaken. Most universities have been doing digital exams for 1 - 4 years (39%). However, 25% are not doing them or have been doing so for less than a year compared about 20% who have been doing them 5-9 years. A further 14% have 10 years or more of experience. This range of time also relates to the diversity in implementation in different subject areas.

There is little difference between current and future planned use of digital exams. The type of digital exam most widely implemented at present and planned for the future are quizzes, such as multiple choice, being ranked the highest with 89% and 83% respectively. The qualitative data showed that there is increasing interest in the use of digital exams, but the Heads of eLearning general perception is that the types of digital exams will remain the same, except that it is anticipated that there will be more use of word processing as its ranking of 2 increased from 30% to 47%. The use of computer programs remains low and the use of spreadsheets stays as the lowest.

Academics are definitely the main driver for implementing digital exams (77%). Surprisingly, students as the main driver are surprisingly low at 6%. The comments also show that in some cases there is a mix of drivers particularly with senior management and academics.

The main barrier to implementing digital exams is room capacity (44%) followed by managing exam security (23%). However, a range of barriers has been identified which illustrate the complexity of scaling up implementation. These include technical issues, infrastructure and levels of digital literacy.

Nearly a third of Heads of eLearning are greatly involved with digital exams and nearly 2/3rds have some involvement. The majority (73%) is OK with that level of involvement and just over a ¼ would like more (27%).

The complexity and high risks involved with digital exams mean that it is perceived as an area in which there will be increasing use but mainly still with quizzes.

REFERENCES

HeLF, 2018, www.helf.ac.uk