Survey Results
«E-Exams and Use of SEB»

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representative of the eduhub SIG E-Assessment SEB Consortium
mandate on behalf of SWITCH

Background

- SWITCH is participating in the SEB Consortium on behalf of Swiss HEIs

- SIG E-Assessment agreed to exercise the mandate on behalf of SWITCH

- SIG E-Assessment mandate: Voting Delegates of HEIs with signed LOIs
  - build a feature list for SEB
  - suggest and prioritize SEB development goals together with the other Principal Members
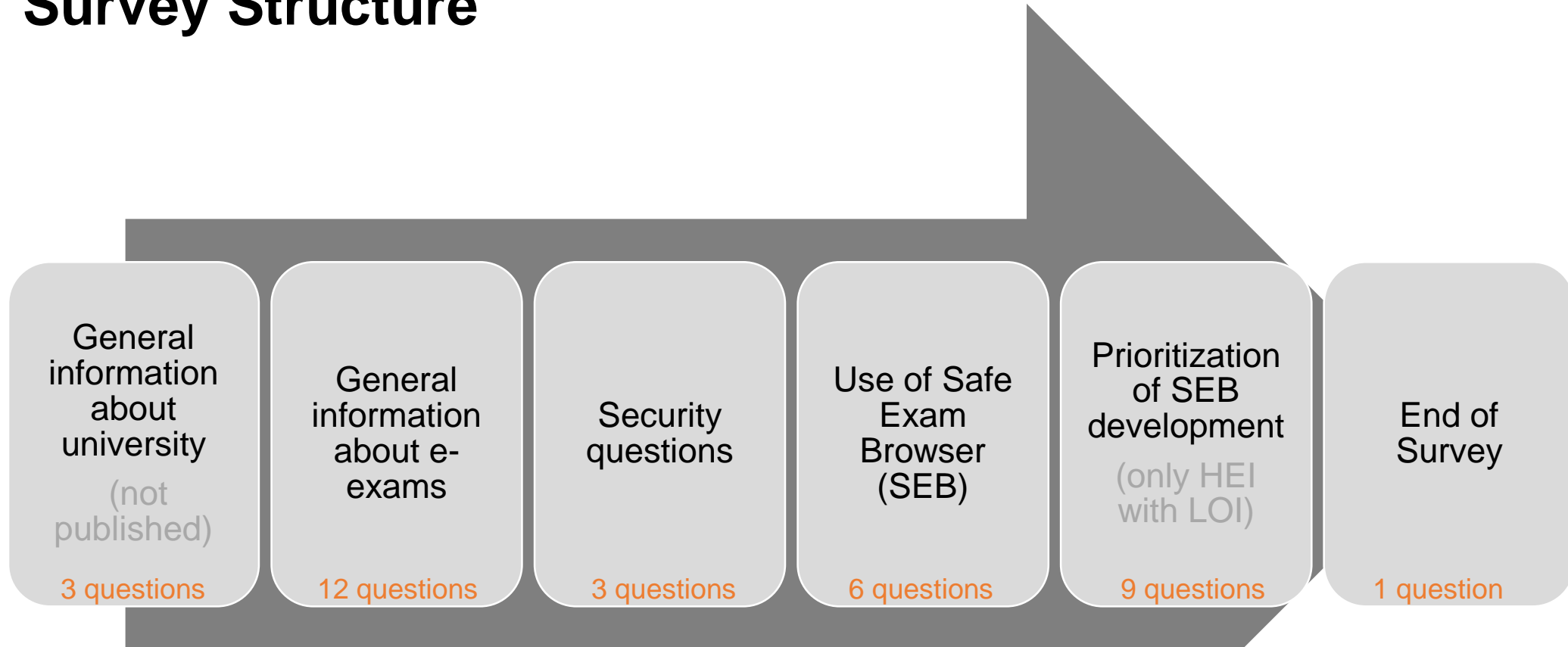
Motivation for Survey «E-Exams and Use of SEB»

- gather facts about e-exams at Swiss HEIs in general

- improve knowledge about the use of SEB at Swiss HEIs

- start process of determining preferences for SEB development goals among Swiss HEIs

Time schedule

- Feb 10th: inform ETWG members about the survey, get feedback

- Approx. Feb 20th: send survey to ETWG members -> redirect to e-assessment experts

- By March 31st: Swiss HEIs complete survey

- April 24th: present survey results at the SIG E-Assessment meeting, workshop
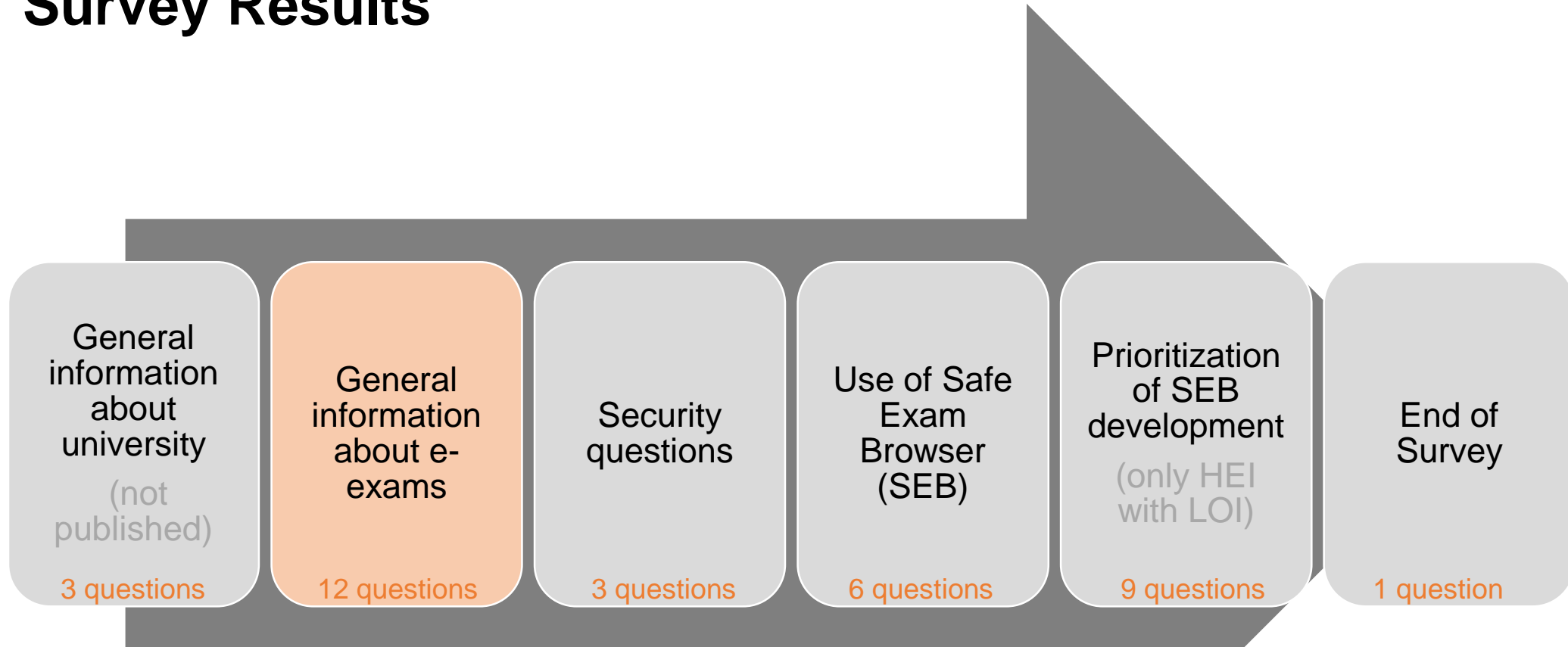
Survey Structure

General information about university (not published)	General information about e-exams	Security questions	Use of Safe Exam Browser (SEB)	Prioritization of SEB development (only HEI with LOI)	End of Survey
3 questions	12 questions	3 questions	6 questions	9 questions	1 question

SIG E-Assessment, April 24th 2017

Survey Data

- Survey was sent to 42 Swiss HEIs (via ETWG-members / other contacts)

- Return rate: 59,5 % (25 HEIs)

- No response from 5 HEIs with LOIs for SWITCH/SEB

Survey Results

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University strategy for e-exams

Does your university's written strategy promote the use of e-exams?
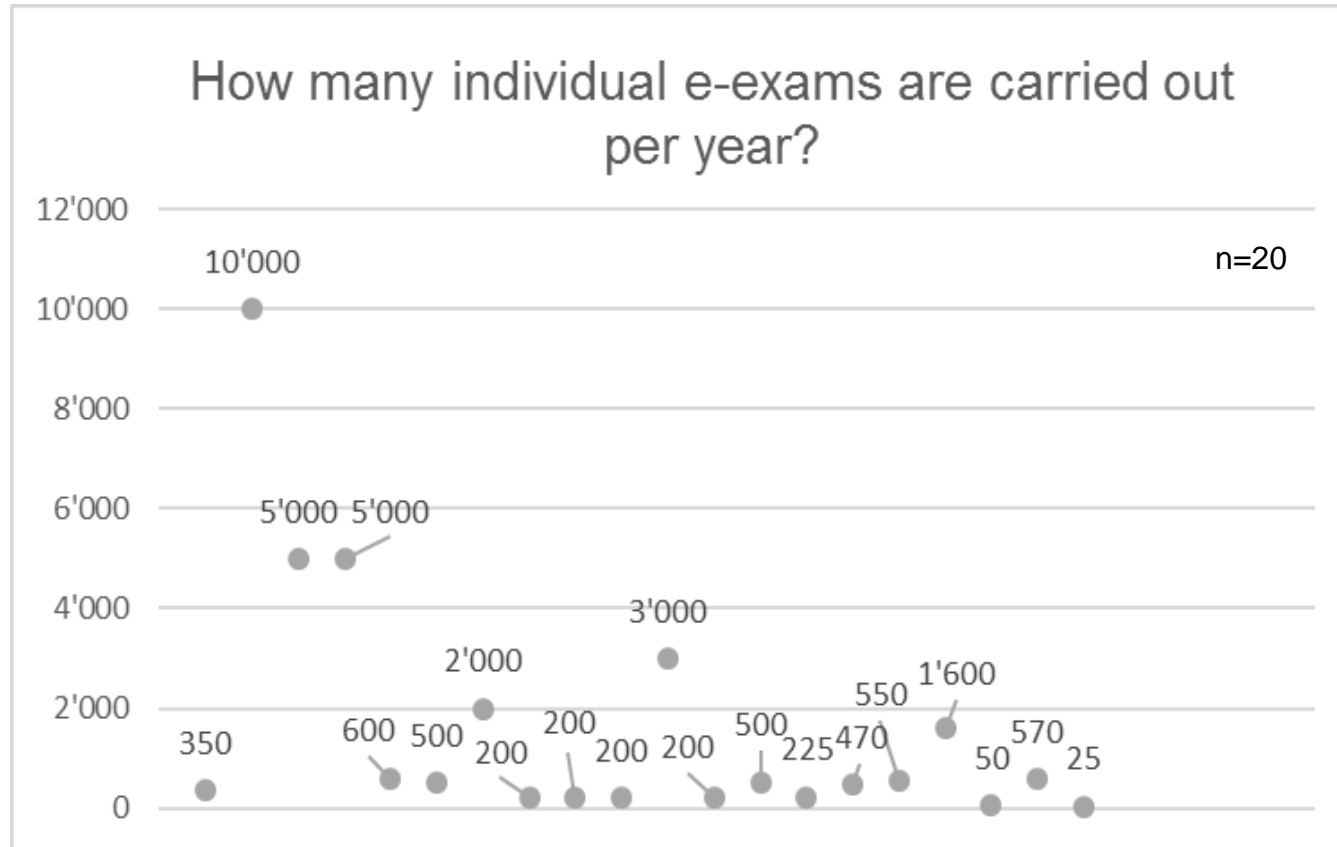
Yes	12%
No	88%

n=25

Number of e-exams
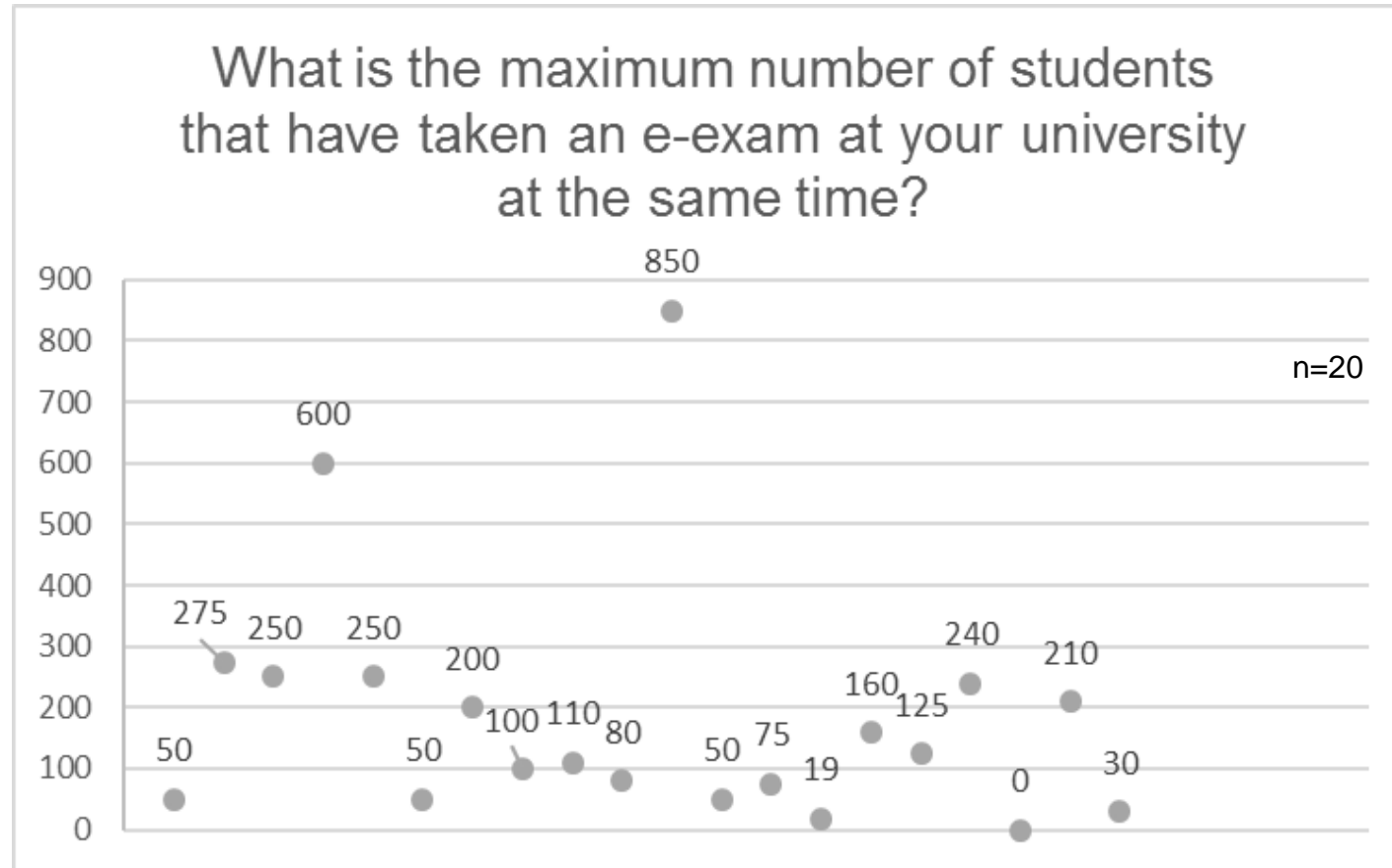
How many e-exams* are carried out at your university per year?
*e-exams: supervised e-assessments for ECTS credits

		n=25
0		20%
1-5		36%
6-20		24%
21-50		16%
51-100		4%

Number of individual e-exams

How many individual e-exams are carried out per year?

n=20

Maximum size of class

What is the maximum number of students that have taken an e-exam at your university at the same time?
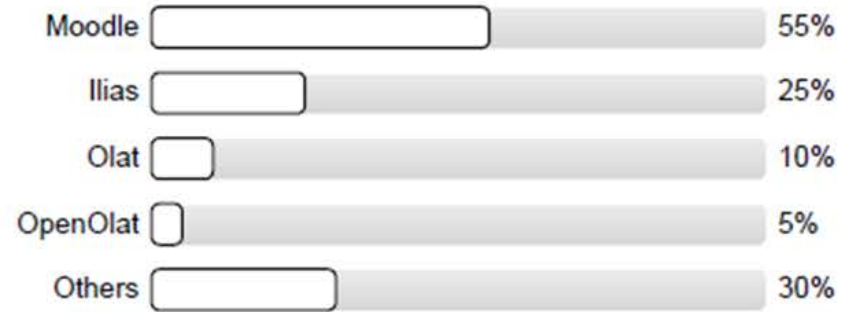
n=20

Tools used

Which of the following tools* do you use for e-exams at your university?
*LMS / E-Assessment Suites / Cloud-based tools oder exam providers

n=20

Tool	Percentage
Moodle	55%
Ilias	25%
Olat	10%
OpenOlat	5%
Others	30%

Bulats
Open
EvaExam
BeAxi
Linux-based
environments
EdX SIOUX
Lernstick
Impero

Use of third party applications

Do you also carry out e-exams with third party applications* at your university?
* professional or specialist softwares (for example Matlab, MS Excel, SPSS,..), files, program codes, statistics packages or integrated development environments

Yes — 70%
No — 30%

n=20

Use of Virtual Desktop Infrastructure (VDI)

Do you use a Virtual Desktop Infrastructure (VDI) for e-exams at your university?

Yes, for all of our e-exams	10%
Yes, for some of our e-exams	15%
No	75%
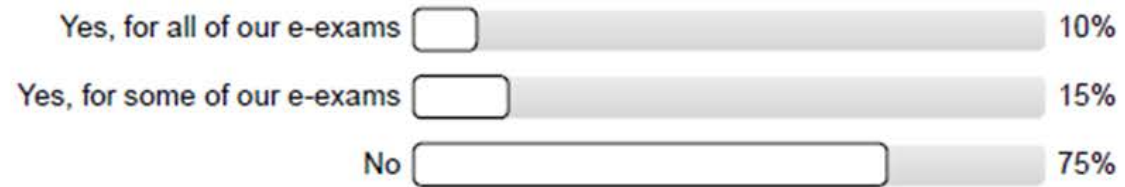
n=20

Managed devices / BYOD

Who provides the hardware/devices* used for e-exams at your university?
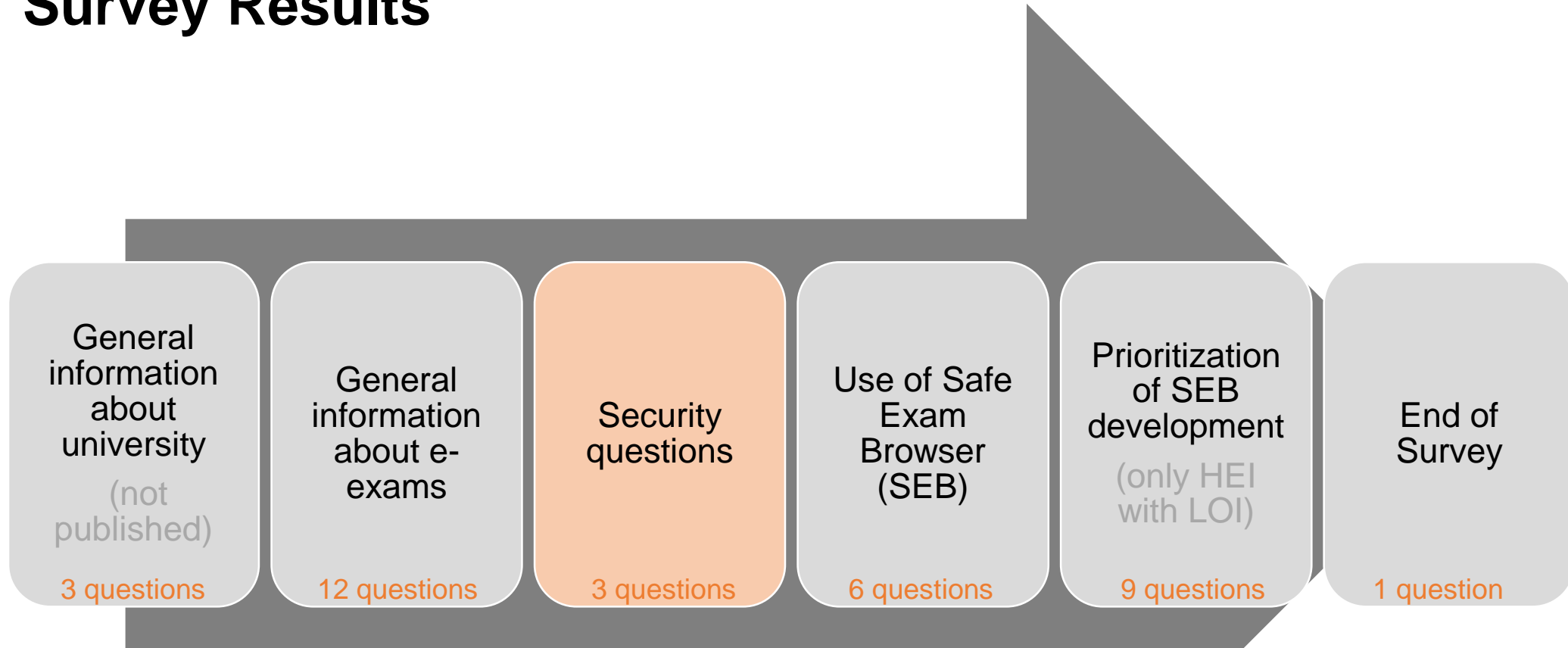*BYOD = students' devices; managed devices = university's hardware*

Only managed devices	20%
Only BYOD	30%
Mostly managed devices, but also BYOD	25%
Mostly BYOD, but also managed devices	25%

n=20

Service and processes

Is there a centralized e-assessment service provider at your university?

n=20

Yes | 45%

No | 55%

Are there specified processes for carrying out e-exams?

n=20

Yes | 60%

No | 40%

Survey Results

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Secure environment

Are e-exams at your university carried out in a secure environment (for example lockdown browser) to prevent fraud?

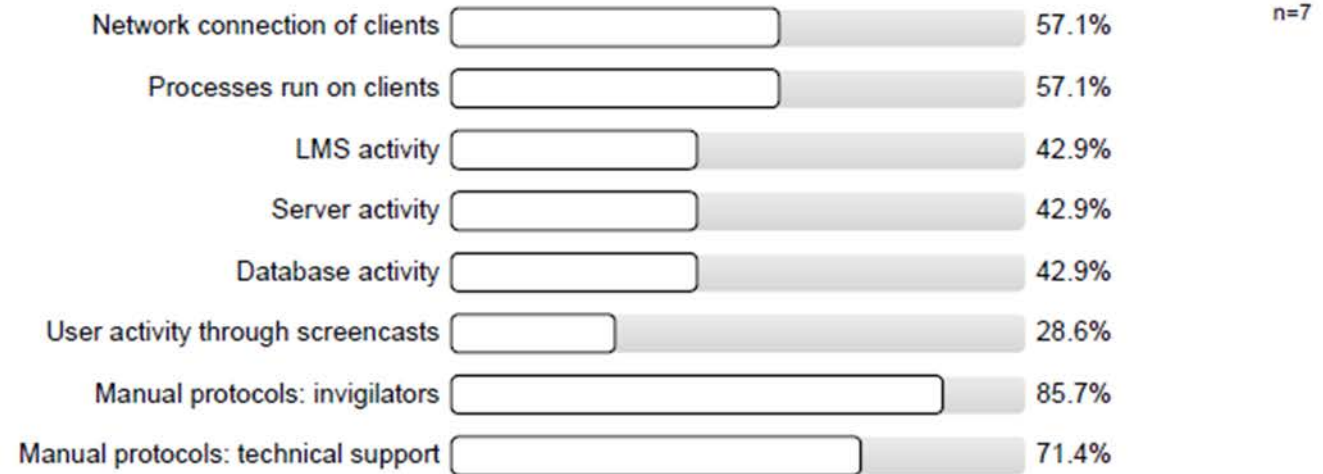|	
Yes	45%
No	25%
Partially	30%

n=20

Monitoring in e-exams
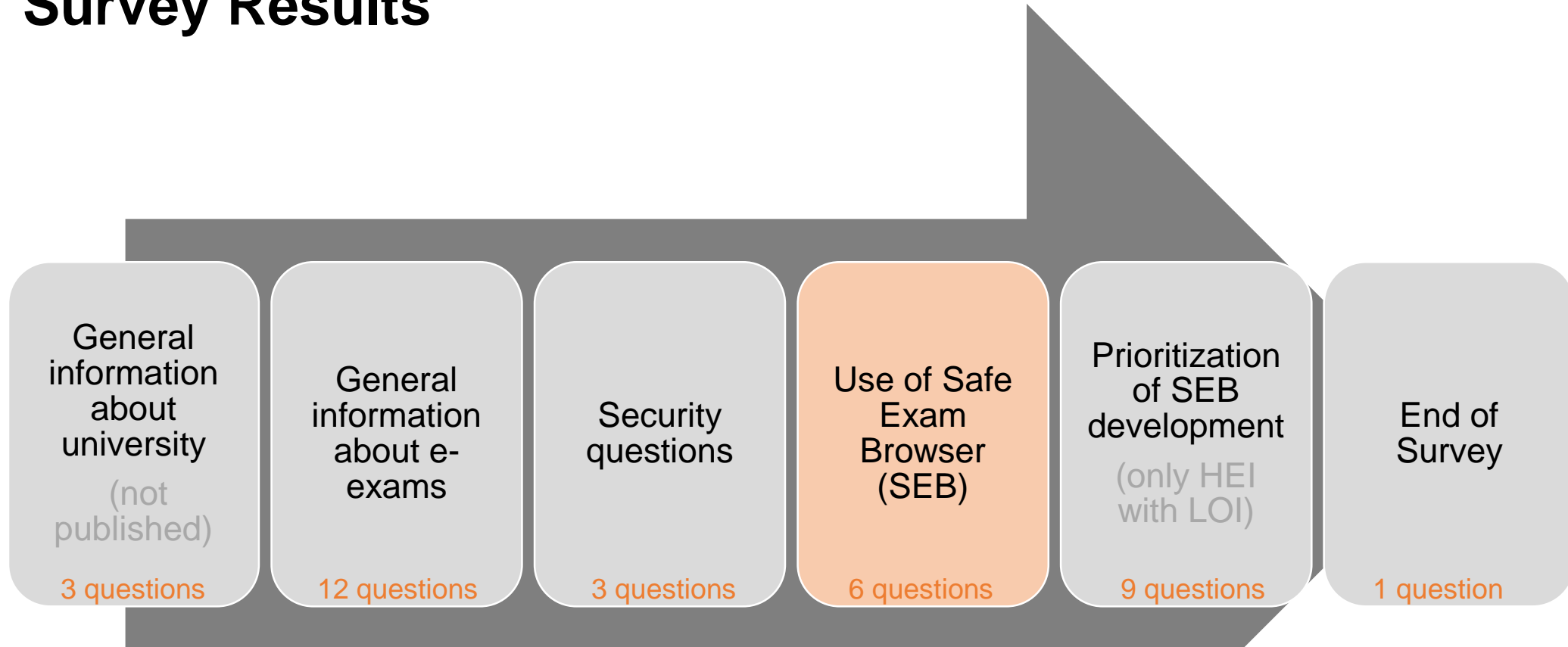
Besides your main e-exam tool (for example LMS), do you use additional tools to log data, monitor processes or proctor clients during e-exams?

Yes	20%
No	65%
Partially	15%

n=20
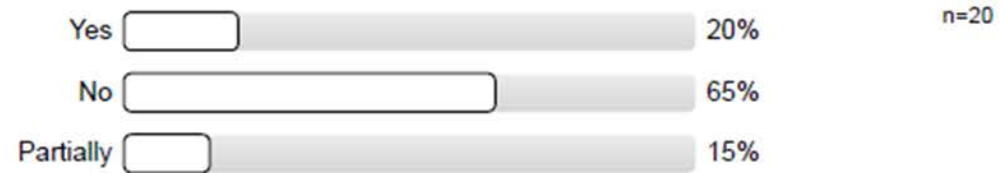
Which processes are actively monitored during e-exams?

Network connection of clients	57.1%
Processes run on clients	57.1%
LMS activity	42.9%
Server activity	42.9%
Database activity	42.9%
User activity through screencasts	28.6%
Manual protocols: invigilators	85.7%
Manual protocols: technical support	71.4%

n=7

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Survey Results

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Use of SEB

Have you used SEB for any of your e-exams carried out at your university?

Yes	60%
No	40%

n=20

How many SEB-exams have you carried out since January 2016 at your university?

1-5	75%
6-20	16.7%
21-50	0%
51-100	8.3%
>100	0%
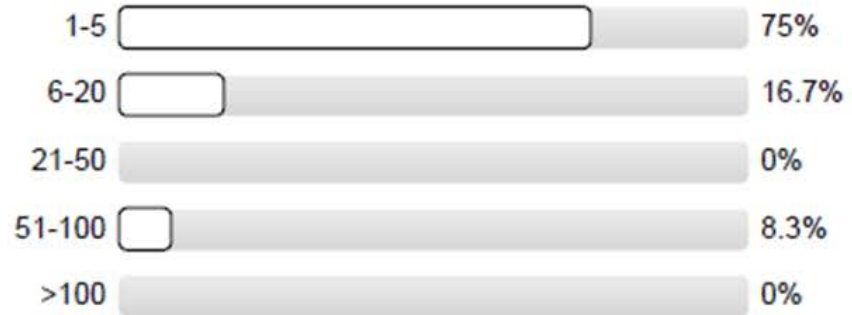
n=12

SEB and third party applications / BYOD

Have you used SEB with third party applications* for any of your e-exams?
*professional or specialist softwares (for example Matlab, MS Excel, SPSS,..), files, program codes, statistics packages or integrated development environments

Yes		25%	n=12
No		75%	

Have you used SEB on BYOD for any of your e-exams?

Yes		90%	n=10
No		10%	

SEB and VDI

Do you use SEB in a setup with a Virtual Desktop Infrastructure (VDI)?

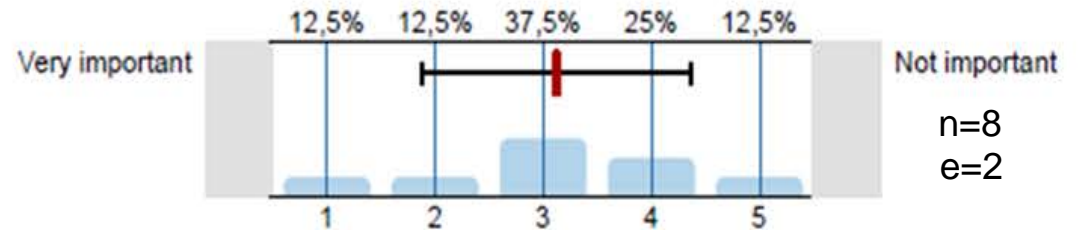|	
Yes	33.3%
No	66.7%
Partially	0%

n=12
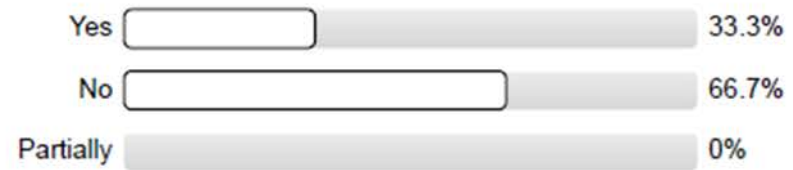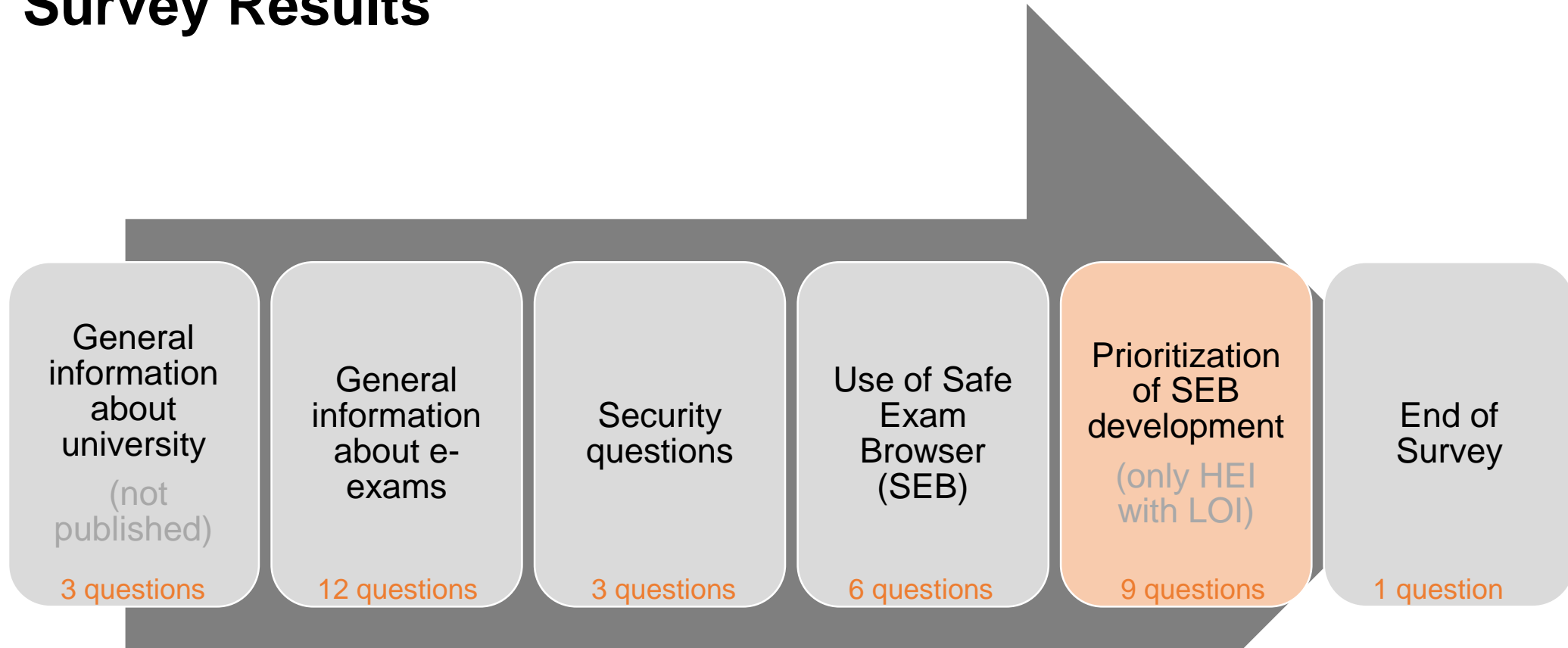
Prioritization of SEB development

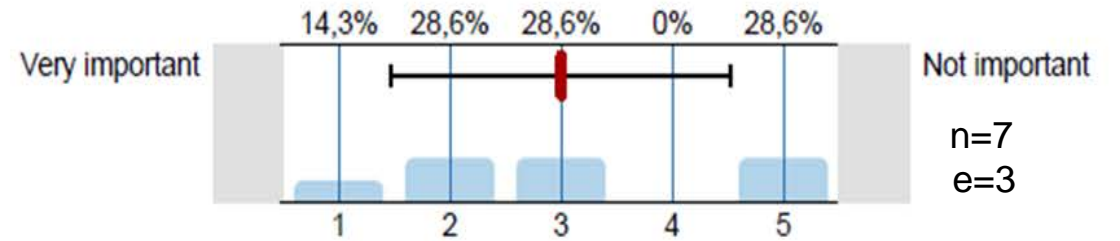SEB integration in additional LMSs and E-Assessment Suites (for example Canvas)
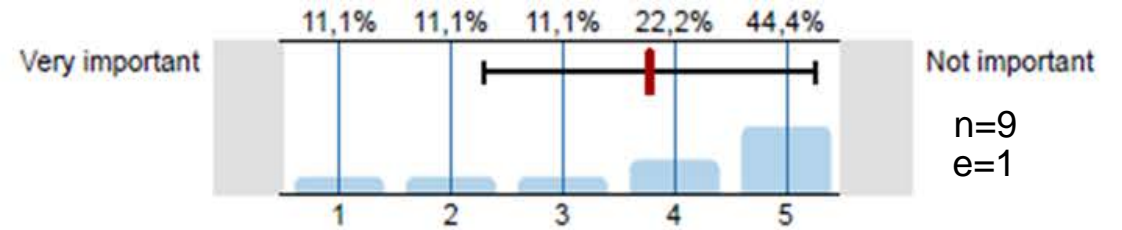
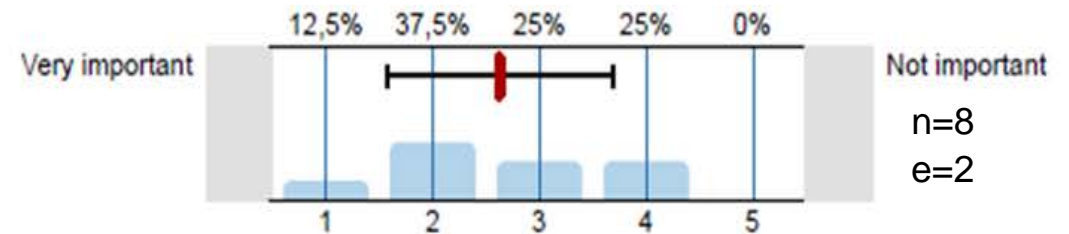Optional support for multimedia functionaliy like webcam and microphone input

Prioritization of SEB development

Optional support for selecting spelling dictionaries for various languages

| 14,3% | 28,6% | 28,6% | 0% | 28,6% |

Very important — Not important

n=7
e=3

Optional support for acessibility tools like screen readers, magnifier

| 12,5% | 37,5% | 25% | 25% | 0% |

Very important — Not important

n=8
e=2

Prioritization of SEB development

Centralized database for prohibited third party tools and applications, which should not run during an exam using SEB.
- The database file can be imported into a SEB configruation file (or later directly downloaded by SEB)
- SEB checks if a prohibited application from this "blacklist" is running and instructs the user to quit it first before starting an exam
- This will prevent to use tools like screen recording or screen sharing during exams

	28,6%	28,6%	14,3%	28,6%	0%
Very important					Not important

n=7
e=3

SEB JavaScript API for server functionality
- Process monitoring, so exam system can react if unwanted applications are running/get started on exam clients
- Detect when a client loses connection (was restarted or SEB was terminated)
- Check for code signatures to make sure correct (not renamed or otherwise manipulated) third party software is used

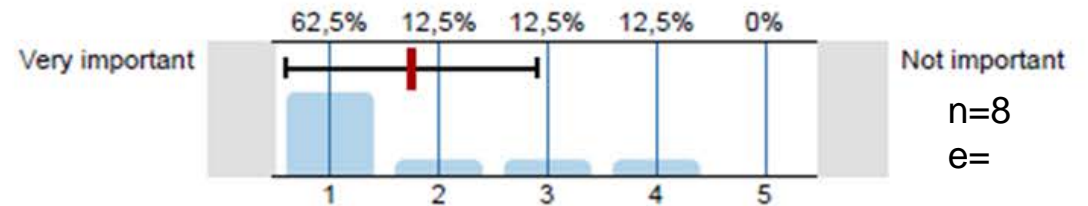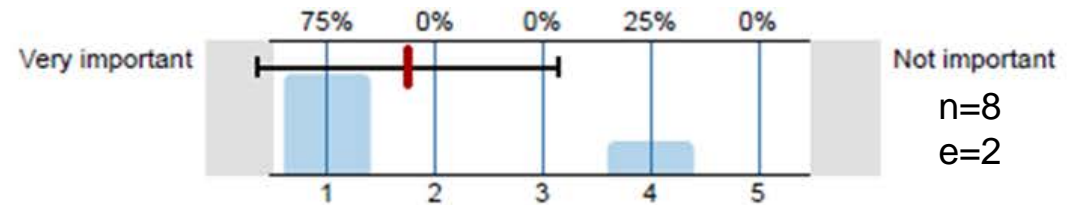|	25%	62,5%	0%	12,5%	0%
Very important					Not important

n=8
e=2
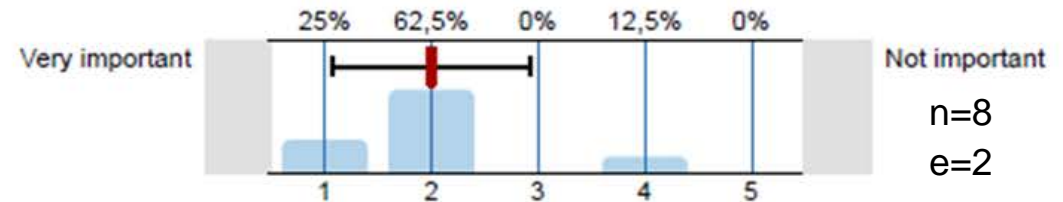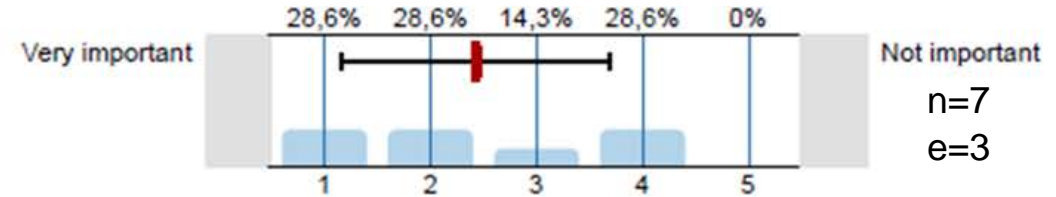
Prioritization of SEB development
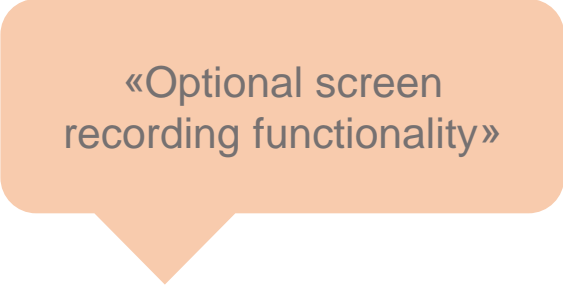
Tablet versions (Windows tablet, iPad)
- Improved support for freehand drawings, with focus on natural pen/pencil drawing usability
- Use tablet as second screen for allowed documents during exam, for example lecture script
- Using tablet computers with digital pens/styluses as an additional input device connected with a desktop exam computer for drawing/sketching/ annotations in exams, while using the desktop clients for text essay questions and virtual desktop third party exam tasks

Very important	75%	0%	0%	25%	0%	Not important
	1	2	3	4	5	

n=8
e=2

Improved methods for checking integrity (code signature) of the SEB version used, especially important for BYOD scenarios
- Improve current check for configuration and application integrity inside SEB
- New standalone tool which can be run before an exam by proctors to verify the correct SEB version is used on a student device
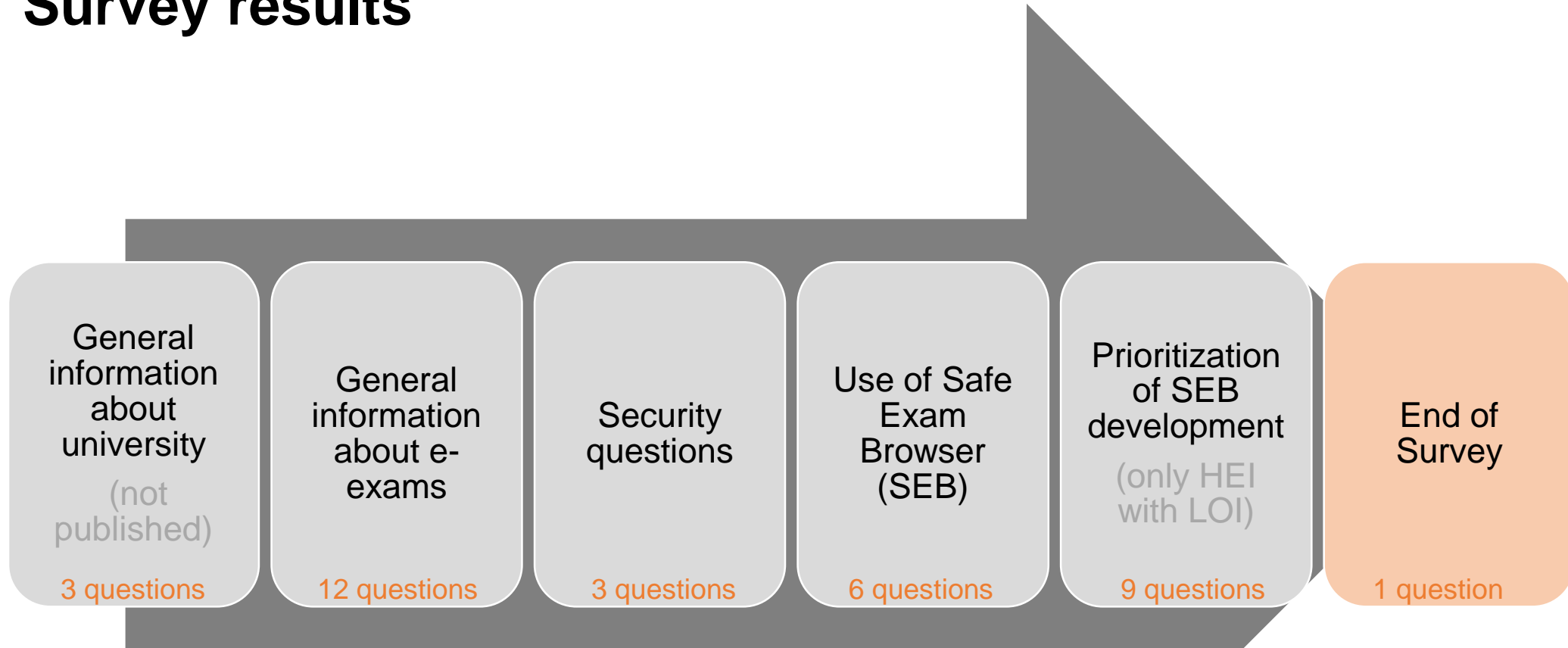
Very important	62,5%	12,5%	12,5%	12,5%	0%	Not important
	1	2	3	4	5	

n=8
e=

Other suggestions for SEB development

«Optional screen recording functionality»

Survey results

General information about university *(not published)*

3 questions

General information about e-exams

12 questions

Security questions

3 questions

Use of Safe Exam Browser (SEB)

6 questions

Prioritization of SEB development *(only HEI with LOI)*

9 questions

End of Survey

1 question

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Other comments on the survey

«An der Umfrage teilgenommen haben nur die HWS, APS und HSA, es gibt jedoch noch weitere Hochschulen»

«Very interesting in these developments even if not yet involved»

«The survey should be clearer on what an e-exam is. For me: any exam using a computer, including the oral with computer»

«Unfortunately we don't know if Medical studies apply e-assessment»

Other comments on e-exams

«Eine Gruppe von Spezialisten (IT Fachdozierende) in der Hochschule haben mehrmals Prüfungen mit BYOD und dem Lernstick (mit Browser und Withlist's) getestet. Dieses Szenario funktioniert noch nicht so gut, dass es standardisierbar ist»

«We are in discussions on e-assessments but are waiting to have management support for the project. There are many lecturers who would like to go ahead with this so I am confident that we will also be on board with e-assessment in the future»

«We will use more and more online-exams at our university, we are very interested in VDI because at the moment we are conducting also online-exams without SEB»

«We are currently thinking about e-assessments in the field of Massive Open Online Courses»

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Other comments on SEB

«We intent to evaluate the use of SEB for BYOD exams. Before 2013 we already used SEB but never on student's devices»

«There are needs for a lockdown setup like SEB, but the number of candidates usually exceeds the number of machines in the largest room by a factor of 2-3, so we are reluctant to introduce it at the moment»

«Wir haben früher den SEB auf gemanagten Geräten eingesetzt. Durch den strategischen Entscheid der Leitung nur noch Open-Internet Prüfungen zu erlauben, haben wir ihn wieder aus dem «Angebot» genommen. Aus technischer Sicht ist der Aufwand für die Nutzung und den Support von SEB zu gross. Wir haben für Betrieb und Entwicklung keine Ressourcen»

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