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Erasmus+ Programme
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Pathway in Enterprise Systems Engineering (PENS)

Innovative TLA techniques

Georgios Dafoulas

Monday, 23/07/2018

Alcala de Henares



Agenda

1. SCATE Pedagogic model
2. Moodle for e-learning & blended learning
3. Virtual Worlds
4. Gamification (virtual team projects)
5. Role Playing (KPMG)
6. Student Observable Behaviours (SOBs)
7. Student Profiling
8. Social Learning Networks
9. Learning analytics
10. Augmented Reality (Google Glass)
11. Smart Learning Environments

CASE STUDY

1. **SCATE Pedagogic model**
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SCATE Pedagogic model

- Scope
- Content
- Activity
- Think
- Extra

The screenshot displays a web browser window showing the SCATE pedagogic model interface. The browser window is titled "BIS1501 - Introduction to e-Business Applications. Unit 1 - e-Business Basics - Microsoft Internet Explorer". The address bar shows the URL "http://www.mdx.ac.uk/gc/demo/final/bis1501/content_3.htm". The page features a blue header with the SCATE logo (S, C, A, T, E in red puzzle pieces) and a navigation menu with tabs for Scope, Content, Activity, Think, and Extra. The main content area is divided into two sections: "1.2 e-Business Definitions" and "Activity 1.2". The "1.2 e-Business Definitions" section includes a paragraph about the propagation of the Internet and a sub-section titled "e-Commerce Definition" with a paragraph explaining e-Commerce. The "Activity 1.2" section includes a paragraph about finding out what types of computers are used in the educational institution or organisation, followed by a list of three bullet points with questions about servers, desktop computers, and other types of computers. The page also includes a "Content Index" and "Activity Index" at the top of each section, and a "Feedback on Activity 1.2" link at the bottom.

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Communication modes

Status: GROUP4-Subject		(T) No of threads
▶ 1/1	Assigning a facilitator	(B) No of branches per thread
▶ 5/5	Task 1: Competition	(I) No of initiators
▶ 49/49	Task 2: Job Advert	(P) No of posts per thread
▶ 28/28	Task 3: Centrifugal Force...	(R) No of replies per thread
▶ 34/34	Facilitator	(L) Max level - deepest branch
▶ 2/2	A specific group member	(W) Total Text Size
▶ 2/2	Group 4 Home Page	(S) Average Text Size
▶ 68/68	Task 4: Groupware Investi...	(A) Authors
Status: GROUP6-Subject		(T) Diversity
▶ 5/17	Assigning a facilitator	(B) Richness
▶ 53/54	Task 1: Competition	(I) Proactive learning
▶ 32/33	Task 2: Job Advert	(P) No of posts per thread
▶ 11/13	Task 3: Centrifugal Force...	(R) Interactivity
▶ 4/5	The first Three Tasks, Gr...	(L) Depth
▶ 2/2	Are group six ready to st...	(W) Participation
▶ 0/1	tasks' outcome	(S) Motivation
▶ 47/47	Task 4: Groupware Investi...	(A) Group formation



Computer Assisted Assessment

The screenshot displays a computer-assisted assessment interface. It includes a test page with questions and answers, a feedback table, and a list of critical success factors for SMEs.

TEST USABILITY

Question	Strongly Disagree	Disagr
The initial load time of the online test is satisfactory	<input type="checkbox"/>	<input type="checkbox"/>
The load time of the individual pages within the site is short	<input type="checkbox"/>	<input type="checkbox"/>
The time for processing data and providing answers is satisfactory	<input type="checkbox"/>	<input type="checkbox"/>
The online continuous evaluation	<input type="checkbox"/>	<input type="checkbox"/>
The text was easy to see	<input type="checkbox"/>	<input type="checkbox"/>

RESPONSE/LOAD TIME

Feedback

Question	Result
1	Correct
2	False
3	False
4	False
5	False
6	False
7	False
8	False
9	False
10	False
11	False
12	False
13	False
14	False
15	Correct
16	False
17	Correct
18	False
19	False
20	False

Total Score: 3/20
Please complete the Evaluation to see your Rank.

TEST ANSWERS

Question: Which of the following is TRUE on the evolution of EC?
 A. EFTS -> EDI -> Telecommunication Applications -> EC
 B. EDI -> Telecommunication Applications -> EFTS -> EC
 C. EFTS -> Telecommunication Applications -> EDI -> EC
 D. Telecommunication Applications -> EFTS -> EDI -> EC
Correct answer: A

Question: In Wanniger Conceptual Graphs of EC, there are 3 types "Accept Promise" And "Keep Promise". Which of the following is Promise?
 A. Procurement Suppliers
 B. Payment processes
 C. Returns and customer service
 D. Communication to the customer through creative media mix
Correct answer: D

Question: Which are the four influences of the electronic commerce?
 A. Society, Country Specific, Technology, International

EC: critical success factors for SME

- Content
- Convenience
- Control
- Interaction
- Community
- Price Sensitivity
- Brand Image
- Commitment
- Partnership
- Process Improvement
- Integration

Use of rankings

Your First Name : Your Test Marks :

TEST USABILITY

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
RESPONSE/LOAD TIME					
The initial load time of the online test is satisfactory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The load time of the individual pages within the site is short	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time for processing data and providing continuous evaluation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The text was easy to see	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Student ID: 1234 Name: Mbach Mbach

Feedback

Student ID: 1234 Name: Mbach Mbach

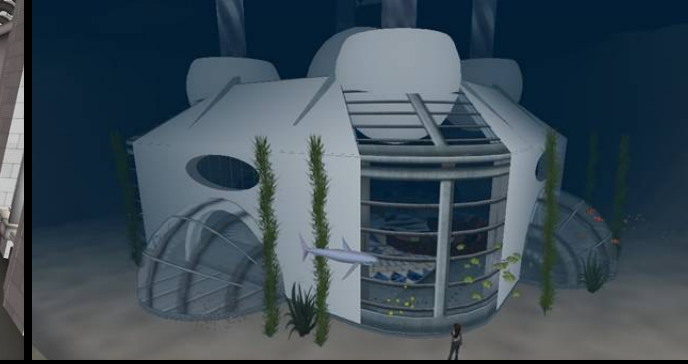
Question	Result
1	Correct
2	False
3	False
4	False
5	False
6	False
7	False
8	False
9	False
10	False
11	False
12	False
13	False
14	False
15	Correct
16	False
17	Correct
18	False
19	False
20	False

Total Score: 500
Please complete the Evaluation to see your Rank

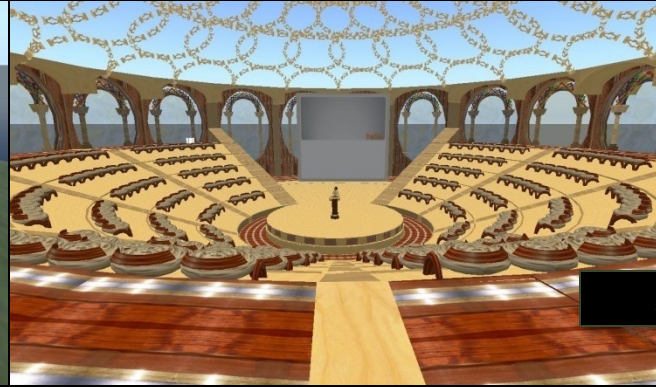
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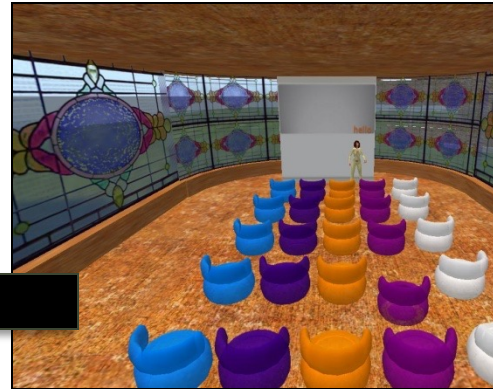
Virtual Worlds



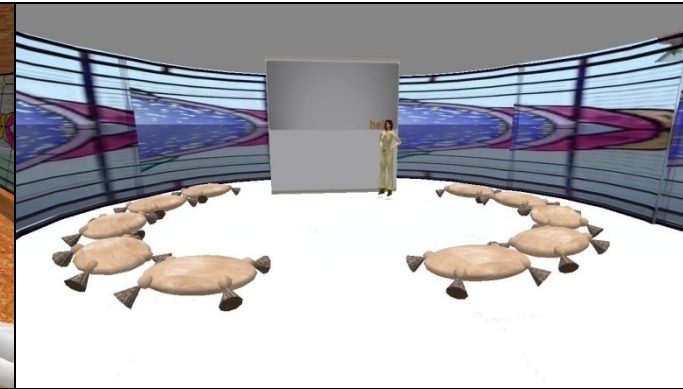
Virtual Worlds



Amphitheatre



Seminar hall



Classroom

Virtual Worlds



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Gamification (virtual team projects)



Using visual analytics for GSD data analysis

GSD - H. J. van den Broek, M. J. van der Grinten, J. M. G. M. M. van der Grinten, J. M. G. M. van der Grinten

Activity for 13FAEGPA

13FAEGPA2

354

13FAEGPA1

127

Activity for 13FAEGPA2

13FAEGPA2

354

ac0509

1

cu0004

27

aqu0003

30

yh0001

1

ab0001

4

bzu0004

16

eelu0004

80

ms0001

11

iug0004

40

eelu0003

65

aqu0004

6

hu0001

7

hu0003

66

Activity for 13FAEGPA1

13FAEGPA1

127

ac0509

1

bzu0001

7

bzu0002

5

yh0001

1

ab0001

2

eelu0001

77

eelu0002

30

aqu0001

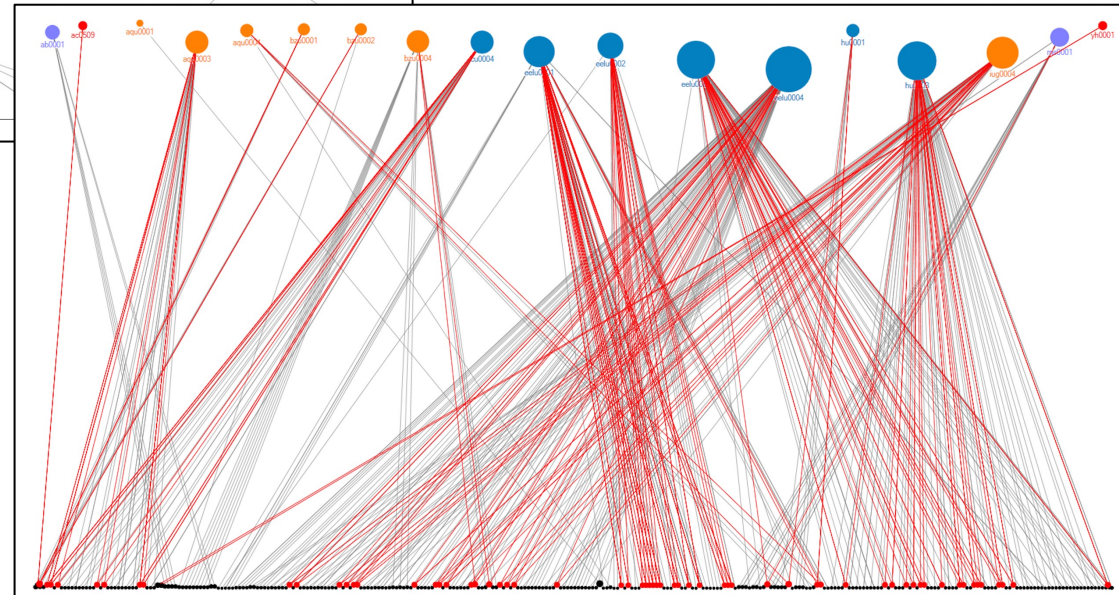
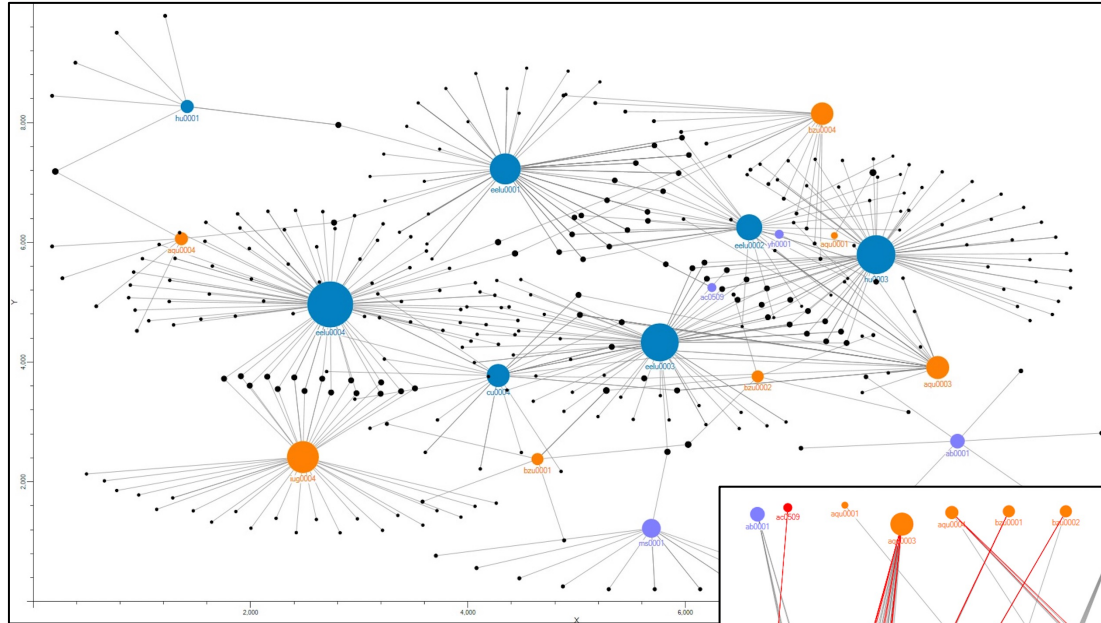
1

ms0001

3

Using visual analytics for GSD data analysis

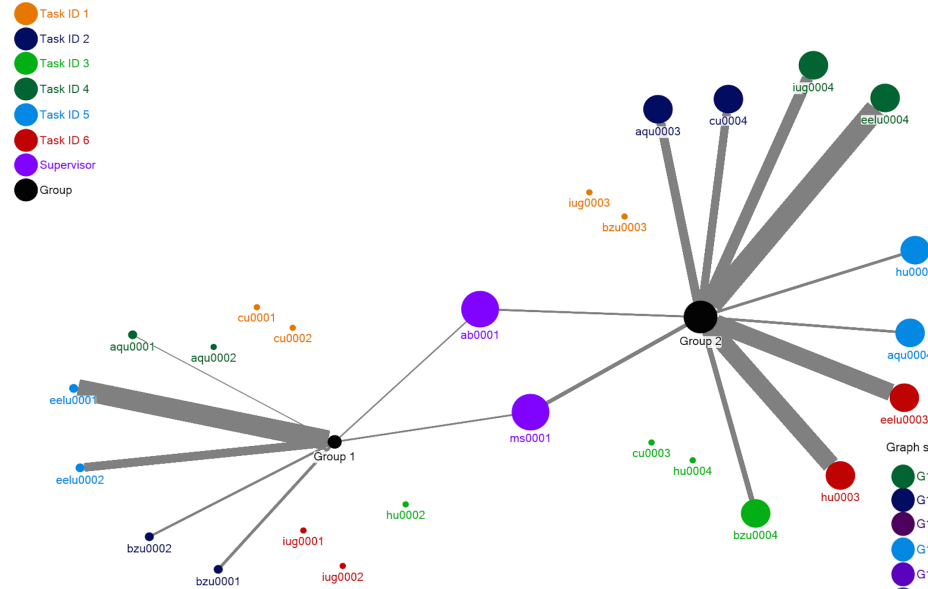
GSD interaction (patterns) monitoring of JMSE pilot teams



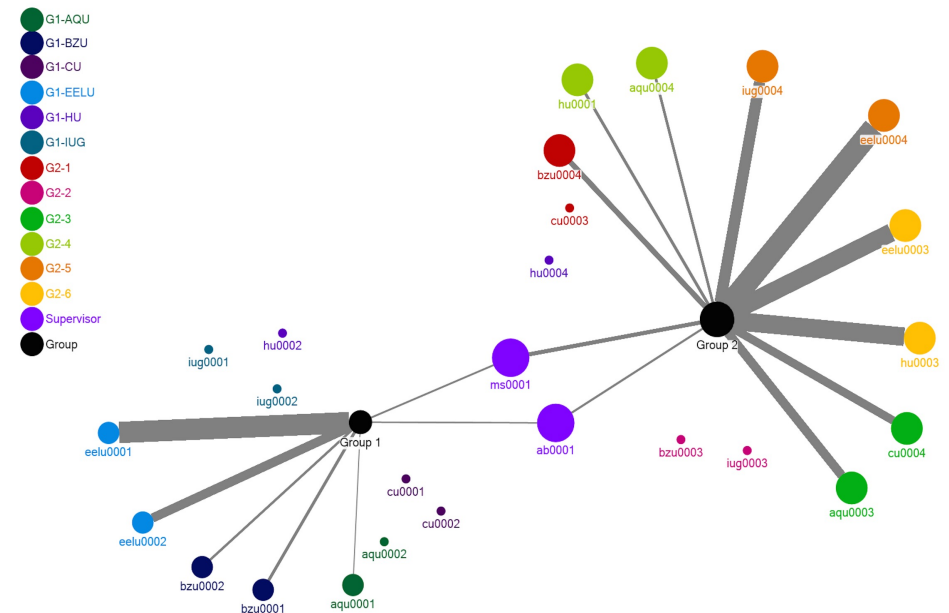
Using visual analytics for GSD data analysis

GSD interaction (patterns) monitoring of JMSE pilot teams

Graph showing messages from user to group by Task ID. Edge Width represents number of messages, Vertex size represents nodes importance to the network



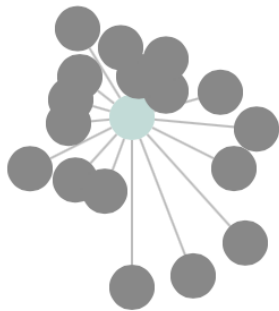
Graph showing messages from user to group by Team ID; Edge Width represents number of messages, Vertex size represents nodes importance to the network



Using visual analytics for GSD data analysis

GSD project management monitoring of JMSE pilot teams

Group cohesion **0.4294**
Individual participation **0.00%**



Group cohesion is a dynamic process which reflects the tendency for a group to stick together and remain united in its pursuit of objectives.

In the graphic above the center represents the project's goal. The blue node represents your participation towards the project's goal. The gray nodes represent the participation of your team members.

Overview Activity Backlog Dashboard Chat Roadmap Issues New Issue Gantt Calendar News Documents Wiki Forums Files Group Activity Member Activity Setting

Connected Users
George Dafoules

2014-05-01 10:13:31 AM - Hazem Saghier: @All I will go now

2014-05-01 10:13:36 AM - Hazem Saghier: @All see you later

2014-05-01 9:52:51 PM - Amouna Matar (LUG): @All Hi

2014-05-01 10:20:46 PM - Abdelrahman Ahmed (Wahdi): I cant believe that

2014-05-01 10:26:37 PM - Abdelrahman Ahmed (Wahdi): the chat is lagging a lot :D

2014-05-01 10:35:31 PM - Abdelrahman Ahmed (Wahdi): @all did u fill the survey ?

2014-05-02 6:35:52 PM - Hazem Saghier: @All Hi

2014-05-02 7:22:13 PM - Huda M. Dawoud (UG): @All I finished the required schema of Employee part

2014-05-02 7:22:40 PM - Huda M. Dawoud (UG): @All I uploaded the files

2014-05-02 7:22:54 PM - Huda M. Dawoud (UG): @All don't hesitate to call me back for more information

2014-05-02 8:27:28 PM - Hazem Saghier: @All I will close now

2014-05-02 8:27:38 PM - Hazem Saghier: @All I was nice working with you

2014-05-02 8:27:52 PM - Hazem Saghier: @All I will enter tomorrow for last checking.

2014-05-02 8:27:57 PM - Hazem Saghier: @All see you later

2014-05-03 11:10:31 AM - Jihad Rjoud: Hi

2014-05-03 11:13:06 AM - Jihad Rjoud: @Real University team does not have a job, a diagnosis of work required him to work in partnership with us so we have done to avoid the problem and the completion of the project

2014-05-03 11:36:47 AM - maik mohammed: @Jihad Hi

2014-05-03 11:37:43 AM - maik mohammed: @Jihad Hi

2014-05-03 11:37:51 AM - maik mohammed: Its ok

2014-05-03 11:38:05 AM - maik mohammed: we finish that proj

2014-05-03 3:45:50 PM - Ibrahim Obaid: Hi.....

2014-05-03 3:52:18 PM - Ibrahim Obaid: hi...maik

2014-05-03 6:18:56 PM - Hazem Saghier: @All Hi

2014-05-03 6:19:35 PM - Hazem Saghier: @All Well, it was nice to meet you all

2014-05-03 6:41:03 PM - Hazem Saghier: @All Good Luck

2014-05-03 6:42:51 PM - Hazem Saghier: @All Salam Alkum

Message

Group cohesion 0.3814
Individual participation 0.00%

Group cohesion is a dynamic process which reflects the tendency for a group to stick together and remain united in its pursuit of objectives.

In the graphic above the center represents the project's goal. The blue node represents your participation towards the project's goal. The gray nodes represent the participation of your team members.

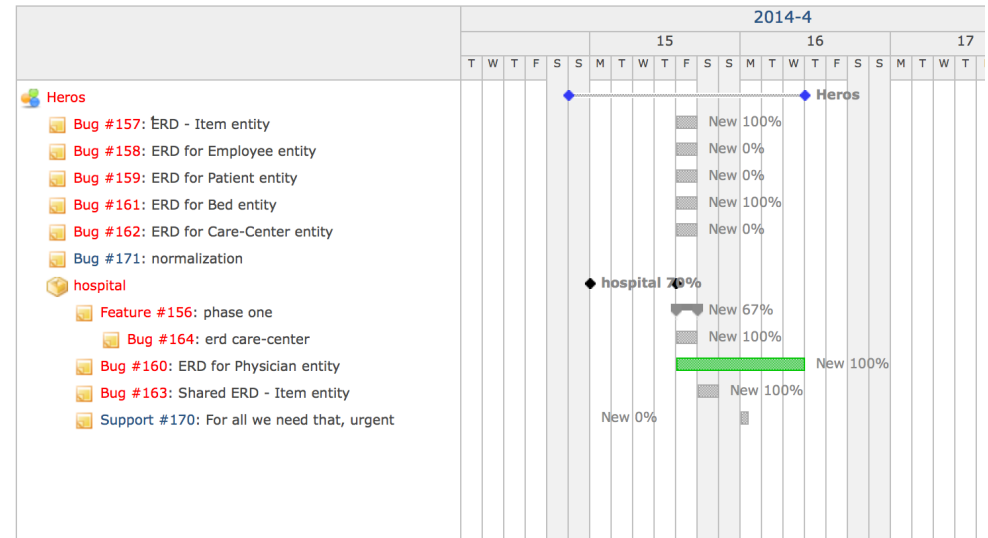
Gantt

Filters

Status

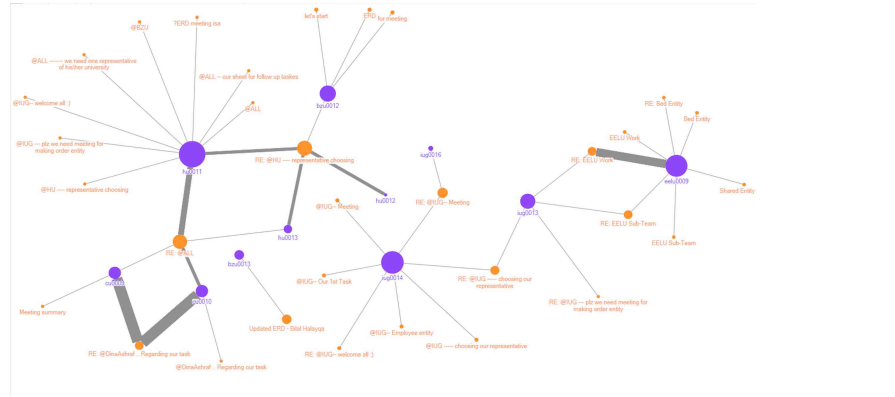
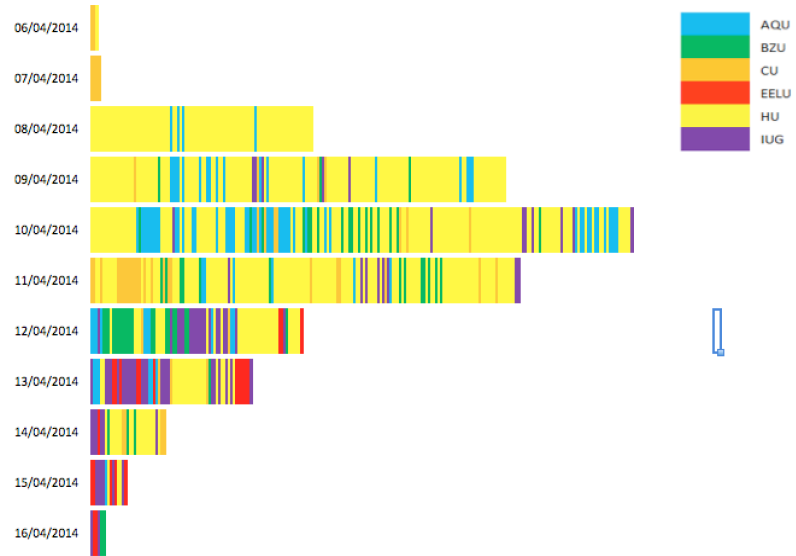
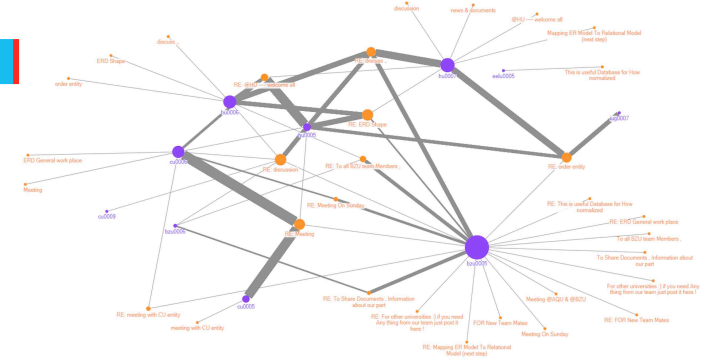
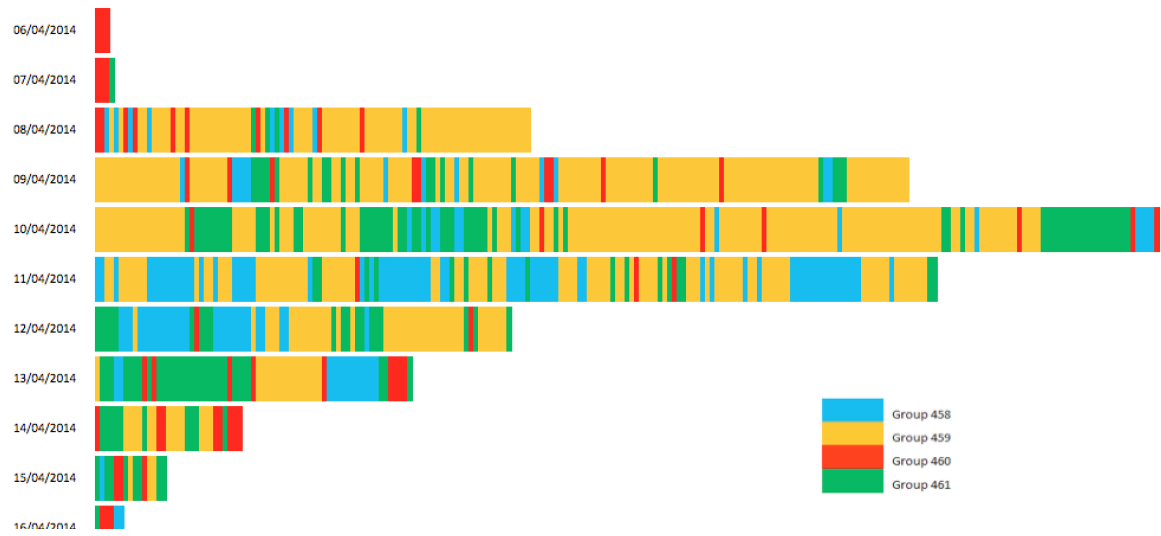
open ▾

2 months from April ▾ 2014 ▾ Apply Clear



Using visual analytics for GSD data analysis

GSD communication frequency monitoring of JMSE pilot teams



Gamification (virtual team projects)



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Digital Evidence (Computer Forensics)

- Synthesis module (practice skills)
- Role playing (5 expert groups)
- Workshop delivery (case studies)
- Scenario specific (419 scam)
- Investigations in:
 - Chat log visual analytics
 - Social networks
 - Emails
 - Browser analysis
 - Hard disk investigation



Digital Evidence (Computer Forensics)

- Key aspects:
 - The actual investigation
 - The role playing scenario (sample of an actual group report)
 - The involvement of KPMG and EY in assessment

The collage consists of several distinct images:

- Top Left:** A network diagram showing a central cluster of laptops connected to a larger group of laptops on the left.
- Top Center:** A screenshot of a Facebook news feed. The main post shows a photo of two people talking, with a comment that says "I'm ready to pay your".
- Top Right:** A photograph of a computer lab with several people sitting at desks with multiple monitors.
- Bottom Left:** A spreadsheet with columns labeled A through J. The first column contains names, and the second column contains URLs, all starting with "https://fbcdn-profile...".
- Bottom Center-Left:** A network graph showing a dense, star-like structure of nodes and edges.
- Bottom Center-Right:** A network graph showing a more complex, interconnected web of nodes and edges.
- Bottom Right:** A photograph of a man in a blue shirt sitting in a chair, with the text "Suspect Arrested by Police" overlaid above him.

Digital Evidence (Computer Forensics)

Final year BSc Computer Forensics students visit Canary Wharf for a Dragon's Den-style event at the professional services firm

Third year students on the **Computer Forensics** degree at Middlesex gave their careers skills a boost recently, when they presented their work to managers at KPMG in London's Canary Wharf.

During the day-long 'business pitching' event, five groups of students each gave a presentation and demonstration of their work in a bid to secure a hypothetical contract for their forensic computing services.

Students presented their latest project in which they investigate a replica Nigerian internet café at the centre of an email fraud scam. After raiding the 'café', students seized computers, memory sticks and hard drives before analysing the materials to create a case against the fraudsters.



Digital Evidence (Computer Forensics)

They presented their findings at KPMG, and managers from the professional services firm then assessed the students based on the accuracy and professionalism of their work. Vouchers worth £200 were awarded to the students who gave the best presentations.

Anthonia Essien was one of the students to present at KPMG, and said that she found the experience very helpful in terms of preparing for job interviews after graduation.

"It helped me realise that I am capable of getting the job I want at a firm as powerful as KPMG," she said.

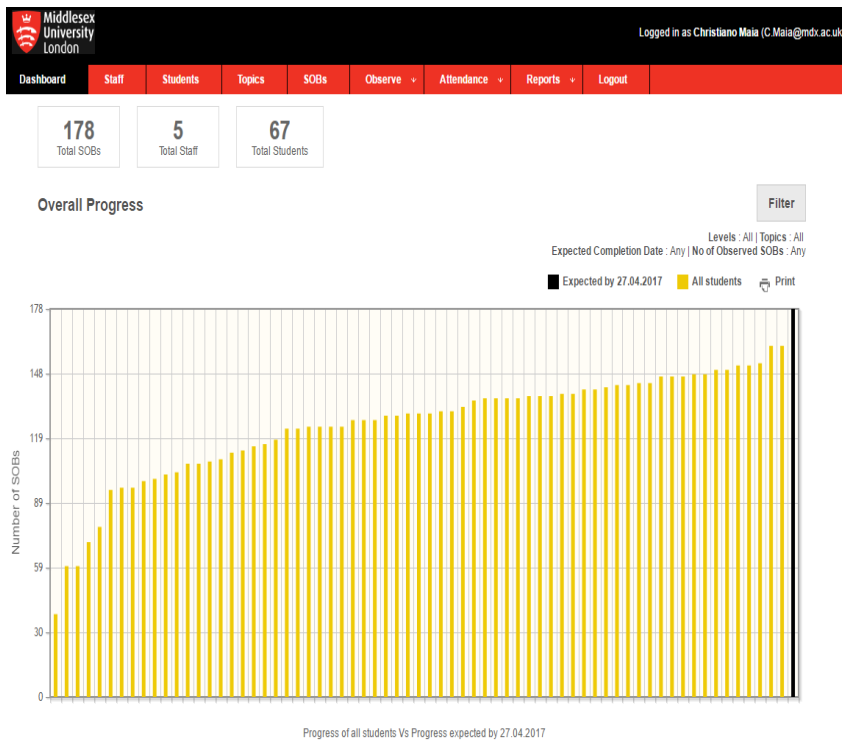
Fellow student Francis Simpson agrees. "The thing I enjoyed the most was the opportunity to present to a senior director of one of the Big Four," he said. "If I can present to him, then I can present to anybody."



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Student Observable Behaviours (SOBs)



SOB ID	Level	Topic	SOB	Start Date	Expected before	Observed
1	Threshold	Element 1 - Group Report	Join a group	03.10.2016	23.10.2016	70
2	Threshold	Element 5 - Facebook	W1) Create a Facebook Account	03.10.2016	23.10.2016	71
3	Threshold	Element 5 - LinkedIn	W1) Create a LinkedIn Account	03.10.2016	23.10.2016	67
4	Threshold	Element 1 - Group Report	Send 10 emails to the companies	24.10.2016	29.10.2016	64
5	Threshold	Element 1 - Group Report	Have an interview confirmation	31.10.2016	06.11.2016	64
6	Threshold	Element 1 - Group Report	Do the interview	07.11.2016	13.11.2016	60
7	Threshold	Element 1 - Group Report	Produce interview notes in writing	21.11.2016	27.11.2016	56
8	Threshold	Element 5 - Facebook	W1) Group to identify an organisation to be used as a case study	10.10.2016	16.10.2016	69
9	Threshold	Element 5 - Facebook	W1) Group to discuss plans for interview with manager / strategis	10.10.2016	16.10.2016	67
10	Threshold	Element 5 - Facebook	W1) Group to discuss plans for research in published works	10.10.2016	16.10.2016	67
11	Threshold	Element 5 - LinkedIn	W1) Individuals to specify how they are contributing to the organisation's strategy	10.10.2016	16.10.2016	64
12	Threshold	Element 5 - LinkedIn	W1) Individuals to specify how they are contributing to the organisation's strategic management	10.10.2016	16.10.2016	66
13	Threshold	Element 1 - Group Report	Create questions for interview	17.10.2016	06.11.2016	64
14	Threshold	Element 1 - Group Report	First draft shown in lab	07.11.2016	13.11.2016	61
15	Threshold	Element 1 - Group Report	Second draft shown in lab	28.11.2016	04.12.2016	61








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Student Profiling



Team Role Summary Descriptions

Team Role	Contribution	Allowable Weaknesses
Plant 	Creative, imaginative, free-thinking. Generates ideas and solves difficult problems.	Ignores incidentals. Too preoccupied to communicate effectively.
Resource Investigator 	Outgoing, enthusiastic, communicative. Explores opportunities and develops contacts.	Over-optimistic. Loses interest once initial enthusiasm has passed.
Co-ordinator 	Mature, confident, identifies talent. Clarifies goals. Delegates effectively.	Can be seen as manipulative. Offloads own share of the work.
Shaper 	Challenging, dynamic, thrives on pressure. Has the drive and courage to overcome obstacles.	Prone to provocation. Offends people's feelings.
Monitor Evaluator 	Sober, strategic and discerning. Sees all options and judges accurately.	Lacks drive and ability to inspire others. Can be overly critical.
Teamworker 	Co-operative, perceptive and diplomatic. Listens and averts friction.	Indecisive in crunch situations. Avoids confrontation.
Implementer 	Practical, reliable, efficient. Turns ideas into actions and organises work that needs to be done.	Somewhat inflexible. Slow to respond to new possibilities.
Completer Finisher 	Painstaking, conscientious, anxious. Searches out errors. Polishes and perfects.	Inclined to worry unduly. Reluctant to delegate.
Specialist 	Single-minded, self-starting, dedicated. Provides knowledge and skills in rare supply.	Contributes only on a narrow front. Dwells on technicalities.



Student profiling – MBTI

What's Your Personality Type?

Use the questions on the outside of the chart to determine the four letters of your Myers-Briggs type. For each pair of letters, choose the side that seems most natural to you, even if you don't agree with every description.

1. Are you outwardly or inwardly focused? If you:

- Could be described as talkative, outgoing
- Like to be in a fast-paced environment
- Tend to work out ideas with others, think out loud
- Enjoy being the center of attention

then you prefer

E

Extraversion

- Could be described as reserved, private
- Prefer a slower pace with time for contemplation
- Tend to think things through inside your head
- Would rather observe than be the center of attention

then you prefer

I

Introversion

2. How do you prefer to take in information? If you:

- Focus on the reality of how things are
- Pay attention to concrete facts and details
- Prefer ideas that have practical applications
- Like to describe things in a specific, literal way

then you prefer

S

Sensing

- Imagine the possibilities of how things could be
- Notice the big picture, see how everything connects
- Enjoy ideas and concepts for their own sake
- Like to describe things in a figurative, poetic way

then you prefer

N

Intuition

ISTJ

Responsible, sincere, analytical, reserved, realistic, systematic. Hardworking and trustworthy with sound practical judgment.

ISFJ

Warm, considerate, gentle, responsible, pragmatic, thorough. Devoted caretakers who enjoy being helpful to others.

INFJ

Idealistic, organized, insightful, dependable, compassionate, gentle. Seek harmony and cooperation, enjoy intellectual stimulation.

INTJ

Innovative, independent, strategic, logical, reserved, insightful. Driven by their own original ideas to achieve improvements.

ISTP

Action-oriented, logical, analytical, spontaneous, reserved, independent. Enjoy adventure, skilled at understanding how mechanical things work.

ISFP

Gentle, sensitive, nurturing, helpful, flexible, realistic. Seek to create a personal environment that is both beautiful and practical.

INFP

Sensitive, creative, idealistic, perceptive, caring, loyal. Value inner harmony and personal growth, focus on dreams and possibilities.

INTP

Intellectual, logical, precise, reserved, flexible, imaginative. Original thinkers who enjoy speculation and creative problem solving.

ESTP

Outgoing, realistic, action-oriented, curious, versatile, spontaneous. Pragmatic problem solvers and skillful negotiators.

ESFP

Playful, enthusiastic, friendly, spontaneous, tactful, flexible. Have strong common sense, enjoy helping people in tangible ways.

ENFP

Enthusiastic, creative, spontaneous, optimistic, supportive, playful. Value inspiration, enjoy starting new projects, see potential in others.

ENTP

Inventive, enthusiastic, strategic, enterprising, inquisitive, versatile. Enjoy new ideas and challenges, value inspiration.

ESTJ

Efficient, outgoing, analytical, systematic, dependable, realistic. Like to run the show and get things done in an orderly fashion.

ESFJ

Friendly, outgoing, reliable, conscientious, organized, practical. Seek to be helpful and please others, enjoy being active and productive.

ENFJ

Caring, enthusiastic, idealistic, organized, diplomatic, responsible. Skilled communicators who value connection with people.

ENTJ

Strategic, logical, efficient, outgoing, ambitious, independent. Effective organizers of people and long-range planners.

3. How do you prefer to make decisions? If you:

- Make decisions in an impersonal way, using logical reasoning
- Value justice, fairness
- Enjoy finding the flaws in an argument
- Could be described as reasonable, level-headed

then you prefer

T

Thinking

- Base your decisions on personal values and how your actions affect others
- Value harmony, forgiveness
- Like to please others and point out the best in people
- Could be described as warm, empathetic

then you prefer

F

Feeling

4. How do you prefer to live your outer life? If you:

- Prefer to have matters settled
- Think rules and deadlines should be respected
- Prefer to have detailed, step-by-step instructions
- Make plans, want to know what you're getting into

then you prefer

J

Judging

- Prefer to leave your options open
- See rules and deadlines as flexible
- Like to improvise and make things up as you go
- Are spontaneous, enjoy surprises and new situations

then you prefer

P

Perceiving

Student profiling – Adize's

Dimension	P	A	E	I
Time Focus	Immediate	Past	Future	Present
Task Focus	Results	Process	Results	Process
Coordination of	Goals	Systems	Ideas	People
Scope	Individual	Systemic	Global	Local
Thinking	Concrete	Abstract	Possibilities	Relationships
Restraint	Unrestrained	Restrained	Unrestrained	Restrained
Regulation	Controlled	Controlled	Free	Free
Reasoning	Literal	Literal	Metaphorical	Metaphorical
Reference	Specific	Specific	Approximate	Approximate
Concerns	External	Internal	External	Internal
Positioning	Central	Peripheral	Central	Peripheral



Student profiling – VARK

V

Learning Styles

- Fast Talkers
- Impatient
- Use words and phrases that evoke visual images
- See and visualize

Teaching Tip
Use charts and graphs

Visual
SEE

- Slow speakers
- Natural listeners
- Linear thinkers
- Prefer explanation over text
- Listen and verbalize

Teaching Tip
Use verbalization

Aural
HEAR

- Prefer written text
- Emphasize text-based input and output
- Enjoy reading and writing

Read/Write
READ/WRITE

Teaching Tip
Use writing techniques

- Slowest talkers
- Slow to decide
- Use all senses to engage in learning
- Do and solve
- Prefer hands-on approaches
- Learn through trial and error

Kinesthetic
DO

Teaching Tip
Demonstrate skills

Google Glass effectiveness and suitability for the task

- Average responses across all seven questions were quite similar for both modules with 71.4% and 71.9%.
- The simplicity of the device scored higher for both modules.
- The most challenging activity was to read from the screen while wearing the Google Glass.



Google Glass classified according to Belbin profiles

- 'Plants' seem to provide the lowest scores in most of the four tasks performed with the help of Google Glass.
- 'Implementers' and 'Monitor Evaluators' seem to find the use of Google Glass quite positive when performing the majority of the tasks.
- 'Coordinators' were the ones who found that Google Glass were comfortable to wear and easy to navigate more than anybody else.
- 'Shapers' were the ones who found it easier to use.

Belbin Role							
Completer Finisher	Coordinator	Implementer	Monitor Evaluator	Plant	Resource Investigator	Shaper	Team Worker
64	51	105	49	41	60	77	73

	Belbin Role									
	All	Completer Finisher	Coordinator	Implementer	Monitor Evaluator	Plant	Resource Investigator	Shaper	Team Worker	
were comfortable to wear	6.97	7.16	7.24	6.87	6.59	6.32	6.87	6.88	7.00	
were easy to navigate	7.40	7.48	7.71	7.57	7.45	7.59	6.97	7.51	7.25	
were simple to use	7.71	7.67	7.86	7.70	7.63	7.68	7.47	7.96	7.55	
while browsing on computer screen	6.97	7.20	7.27	7.19	7.04	6.88	7.07	7.00	6.85	
while reading on computer screen	6.79	7.09	6.96	7.00	6.73	6.78	7.00	6.91	6.58	
while showing content on computer screen	6.92	7.16	7.25	6.92	6.86	6.83	7.00	7.03	6.75	
while writing on computer screen	6.97	7.16	7.33	7.22	6.90	6.83	7.07	6.86	6.93	

Academic Year

(All)

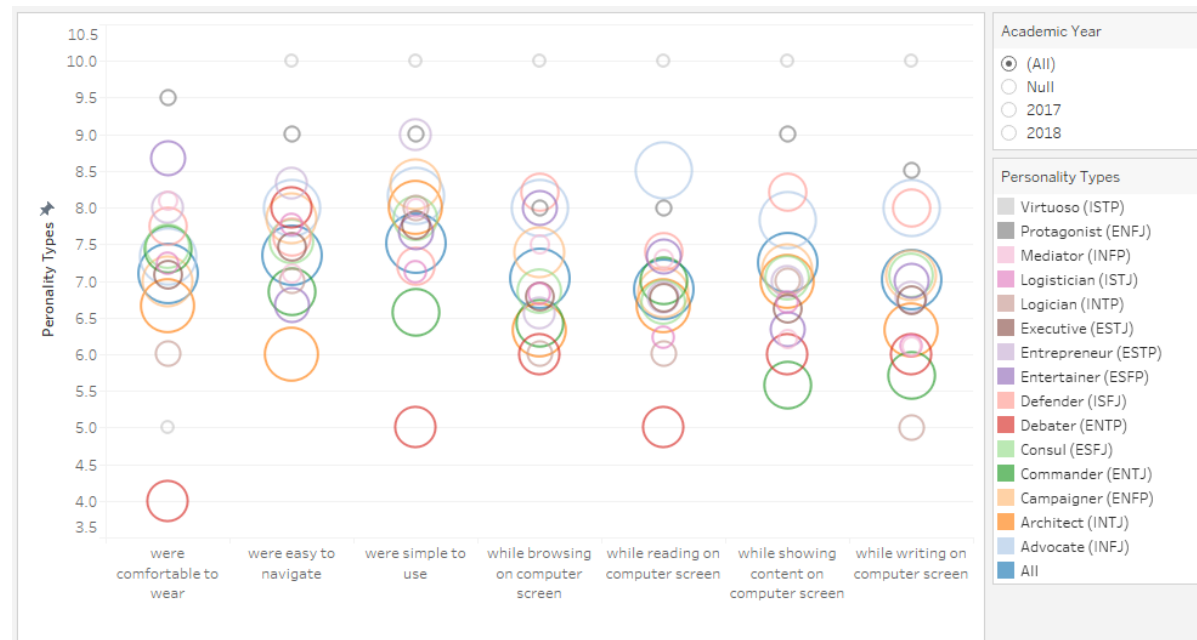
Null

2017

2018

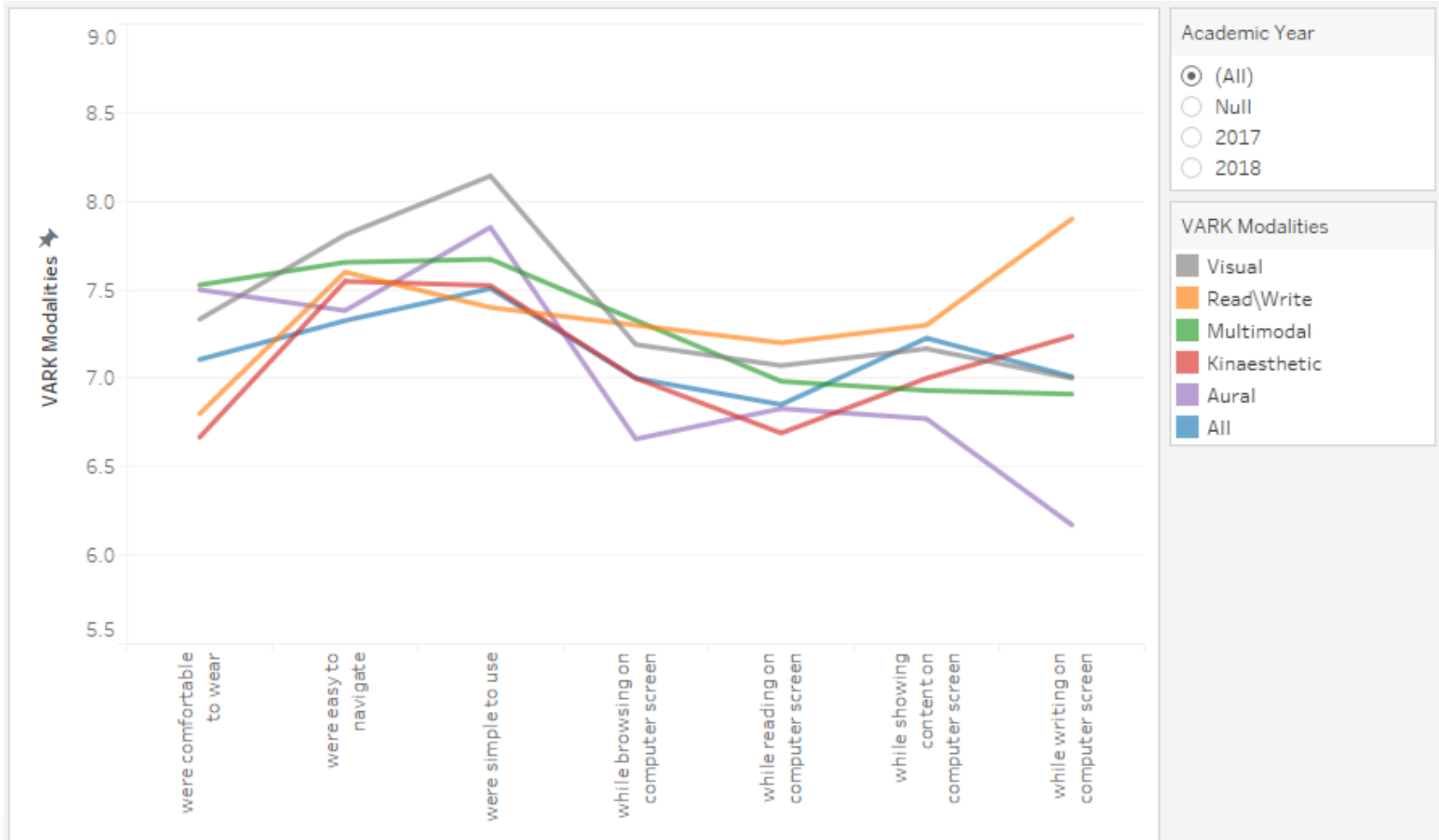
Google Glass classified according to MBTI profiles

- Virtuosos, also known as ISTP profiles (Introversion-Sensing-Thinking-Perception) and 'Protagonists' also known as ENFJ (Extraversion-Intuition-Feeling-Judgment) seem to be the types that were really impressed with the technology and found it easy to use and helpful across most tasks.
- The 'Debater' type also known as ENTP (Extraversion-Intuition-Thinking-Perception) are the ones with the most negative response for comfort, ease of use and ability to read while wearing the Google Glass.
- 'Mediators' known as INFP (Introversion-Intuition-Feeling-Perception) are more positive across most questions.
- 'Commanders' known as ENTJ (Extraversion-Intuition-Thinking-Judgment) provide more negative responses.



Google Glass classified according to VARK profiles

- Read-write and kinaesthetic profiles tend to provide similar responses on the way Google Glass facilitates the different learning tasks.



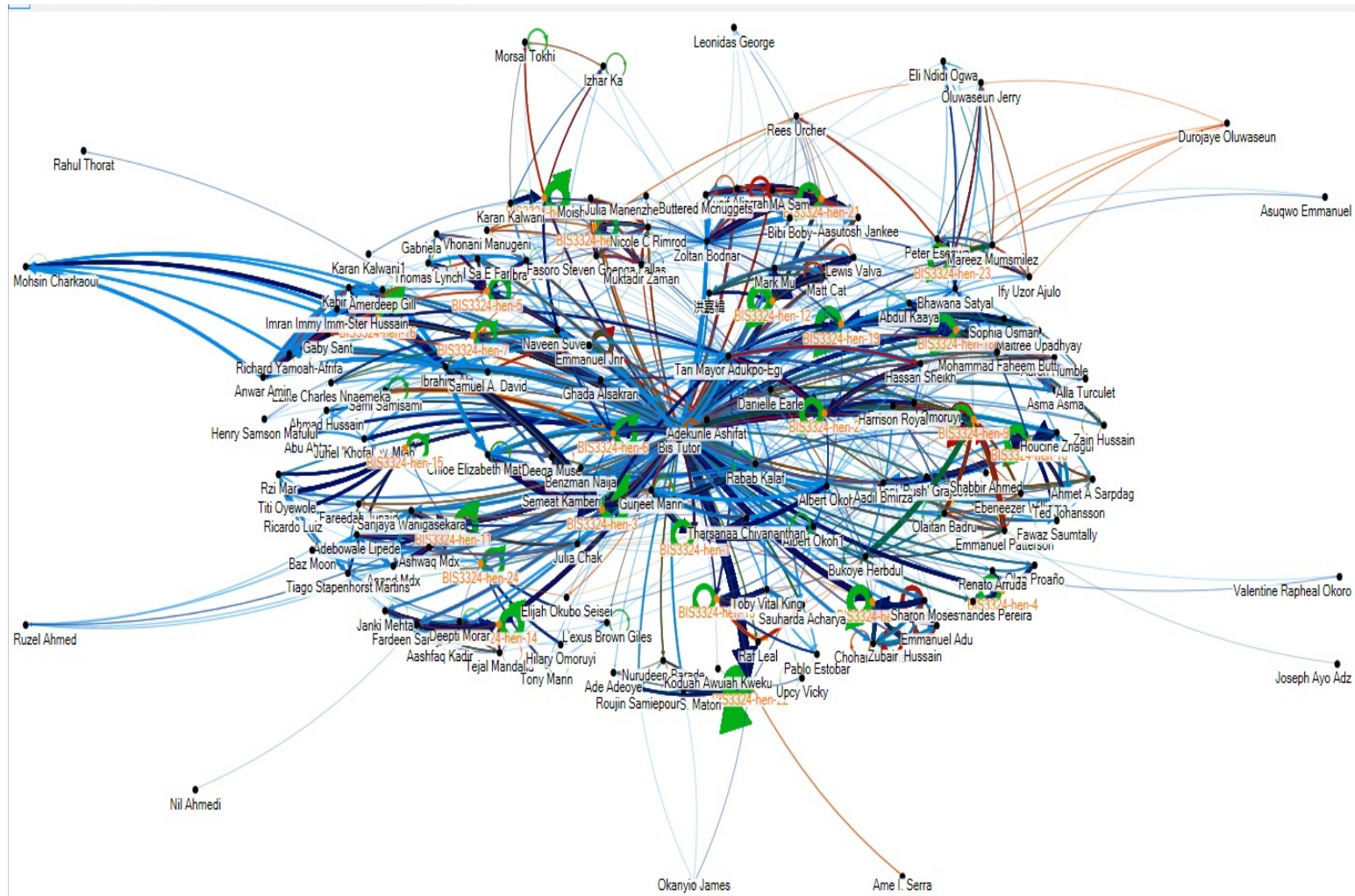
CASE STUDY

1. SCATE Pedagogic model
2. Moodle for e-learning & blended learning
3. Virtual Worlds
4. Gamification (virtual team projects)
5. Role Playing (KPMG)
6. Student Observable Behaviours (SOBs)
7. Student Profiling
8. **Social Learning Networks**
9. Learning analytics
10. Augmented Reality (Google Glass)
11. Smart Learning Environments

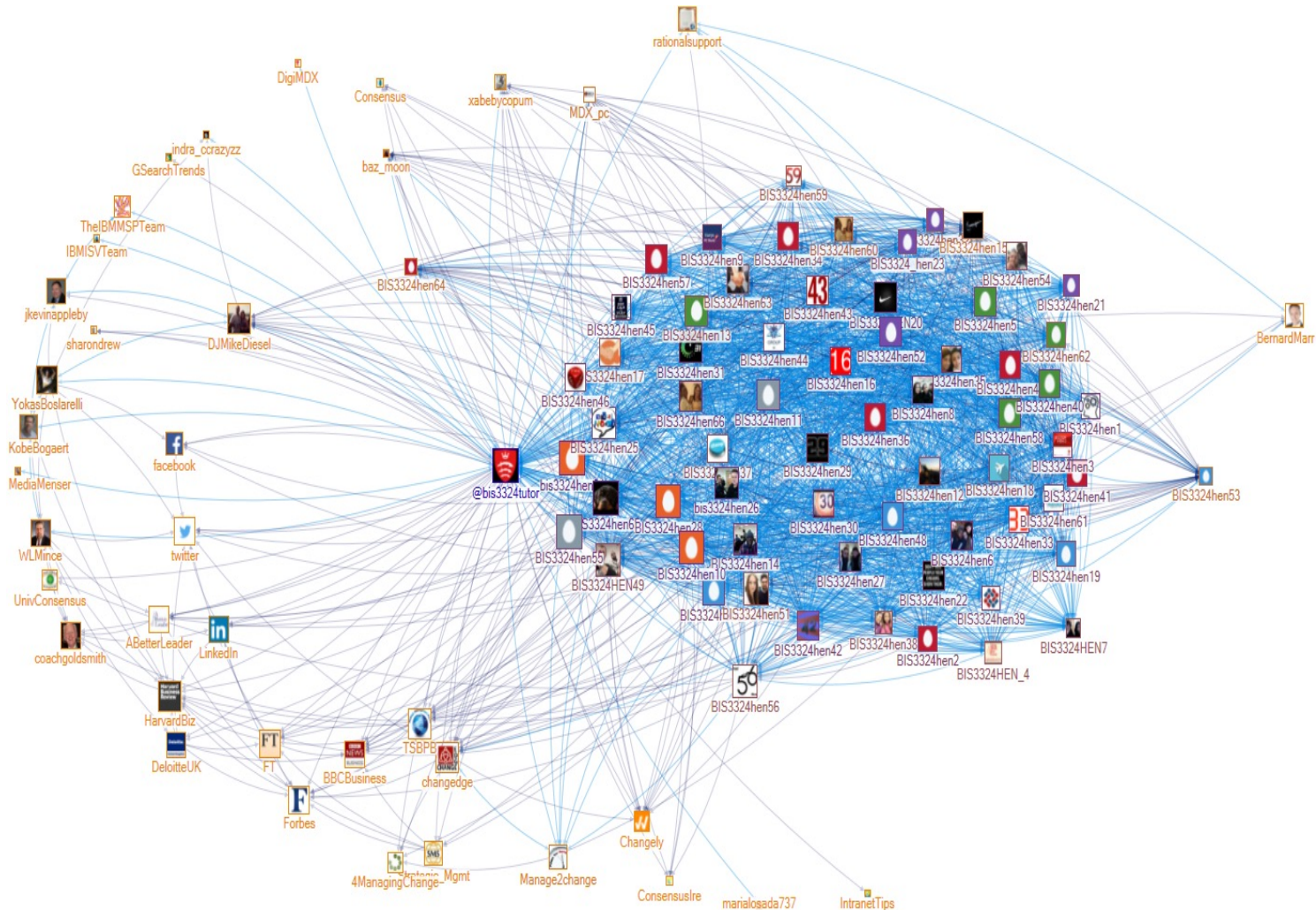
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Learning analytics – Twitter visualisation (isolated students)

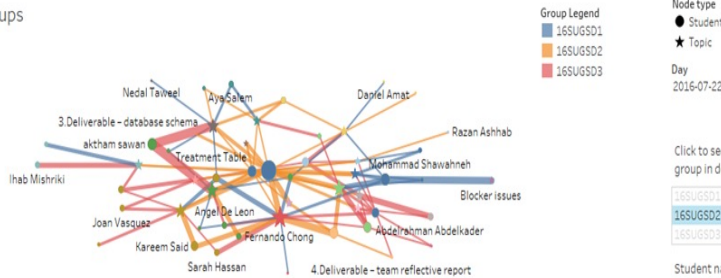


Learning analytics – Twitter visualisation (student cohort links to the outside world)

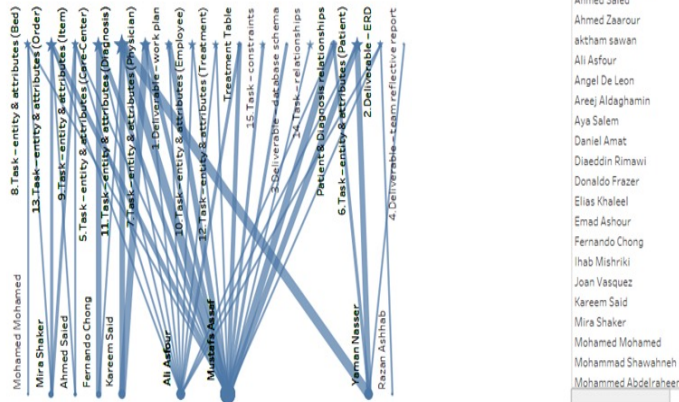


Learning analytics – JMSE pilots

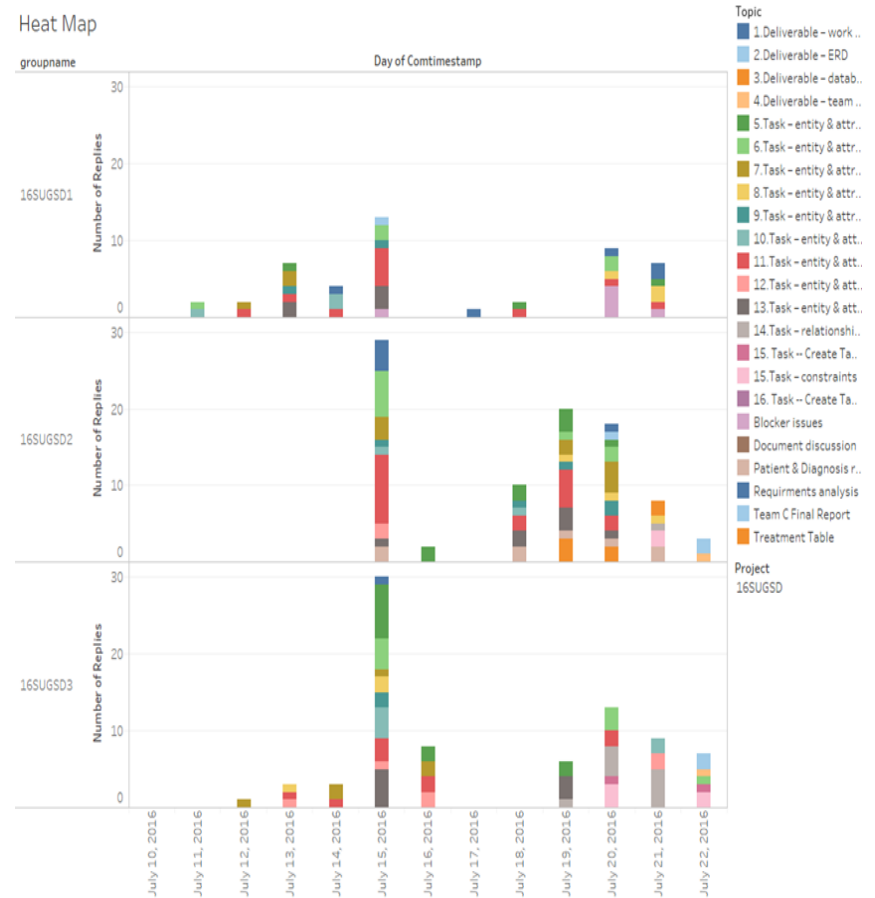
All Groups



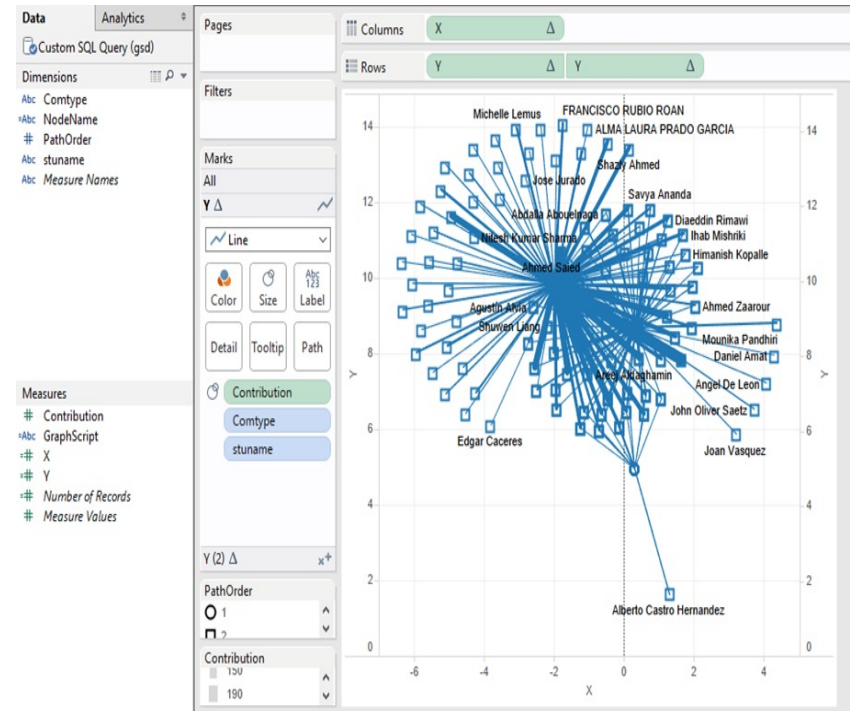
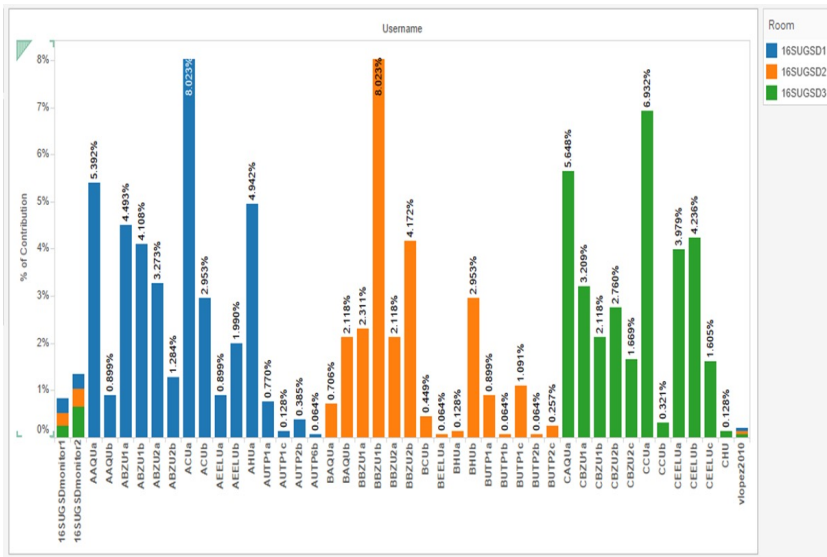
16SUGSD2



Heat Map



Learning analytics – JMSE pilots



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Augmented Reality (Google Glass)

SAFE

Supporting Assessment Feedback Engagement
with
Optical Head-Mounted Devices (OHMD)

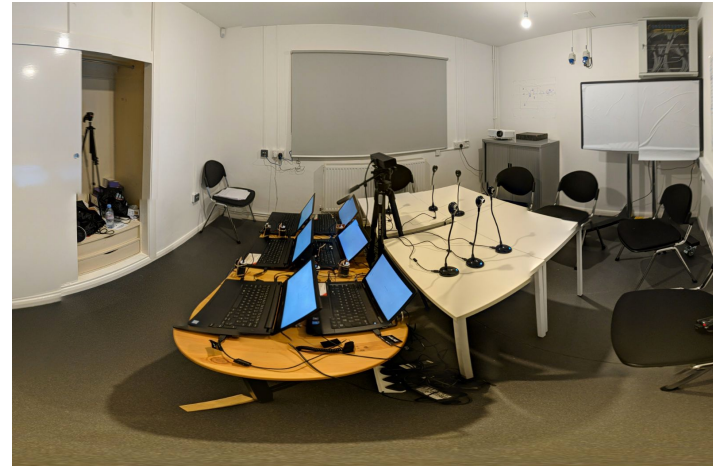
Student:

Cristiano Maia

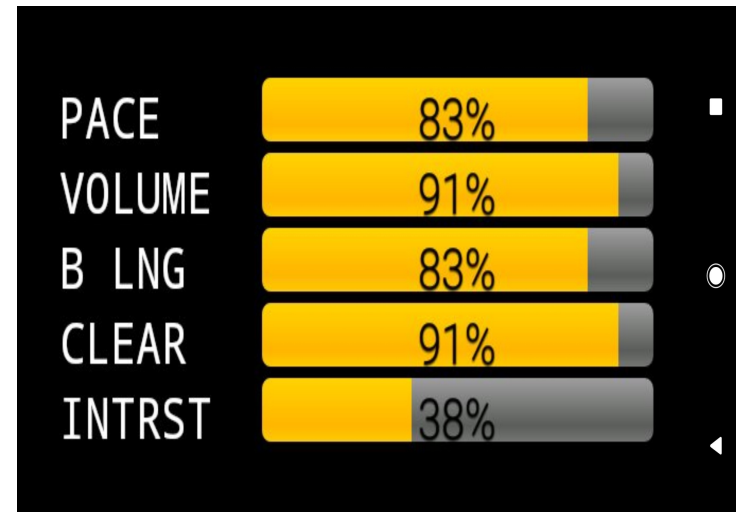
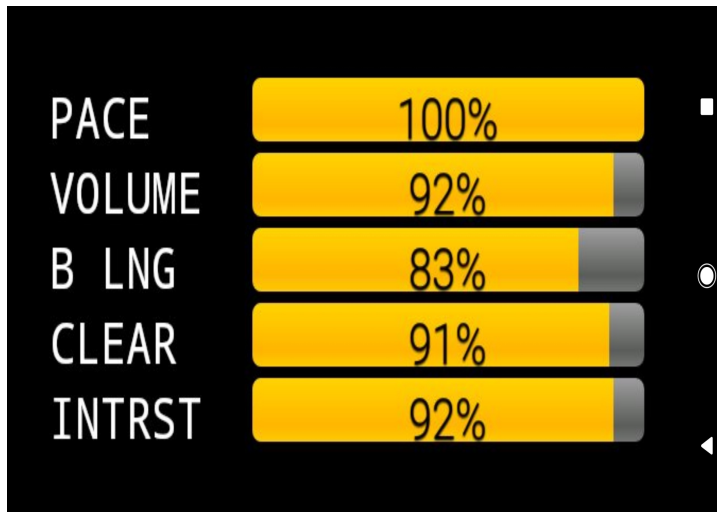
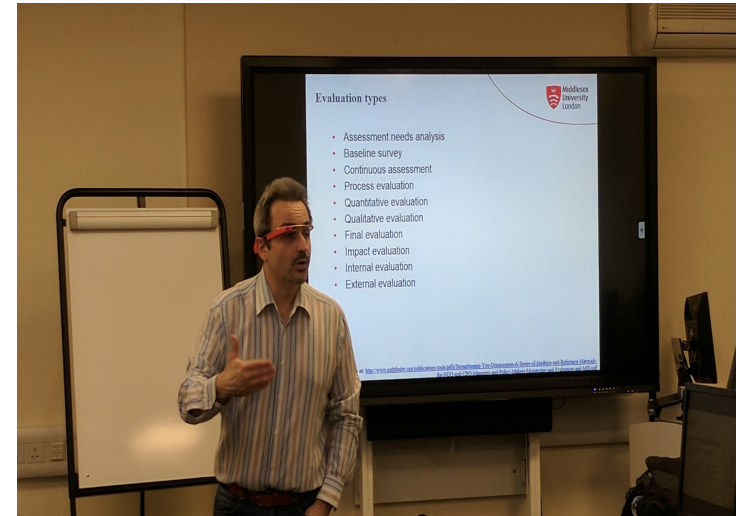
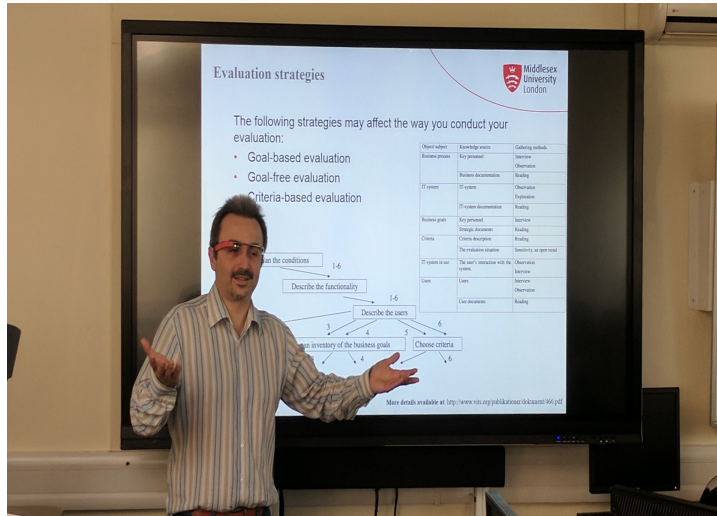
Supervisor:

George Dafoulas

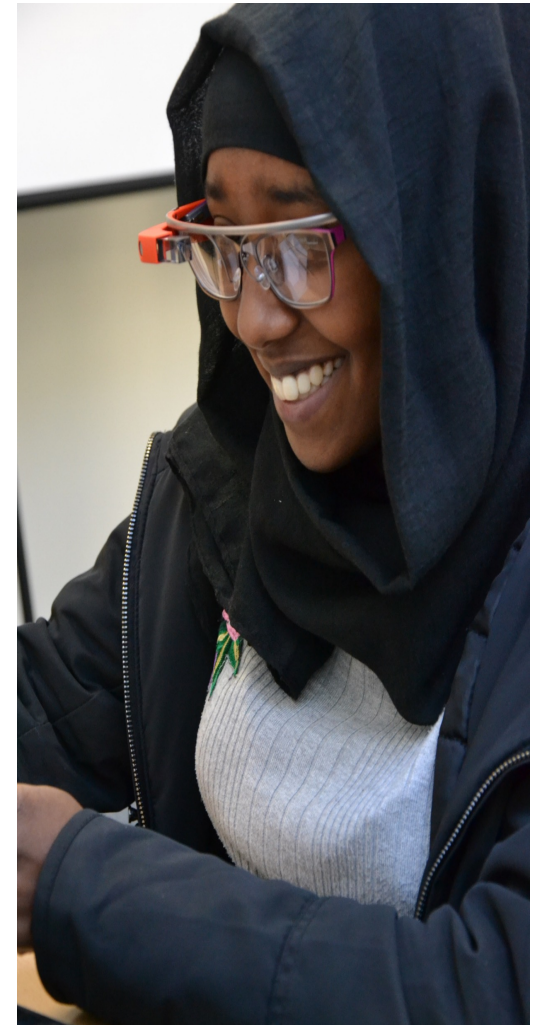
Augmented Reality (Google Glass)



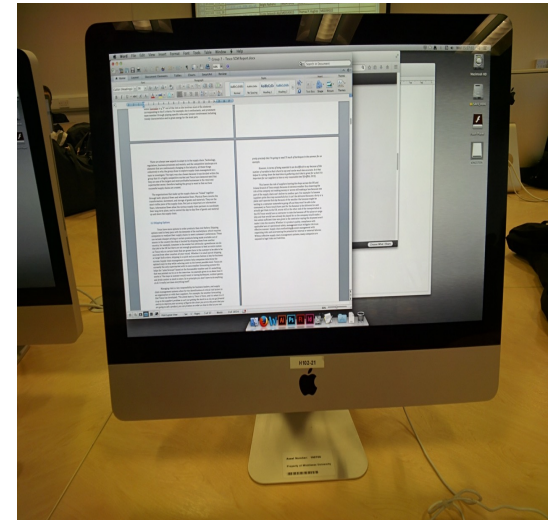
Google Glass experiment – Presentation Feedback



Google Glass experiment – Student Experience



Google Glass experiment – Learning portfolios & plagiarism detection



Google Glass experiment – Presentation Feedback



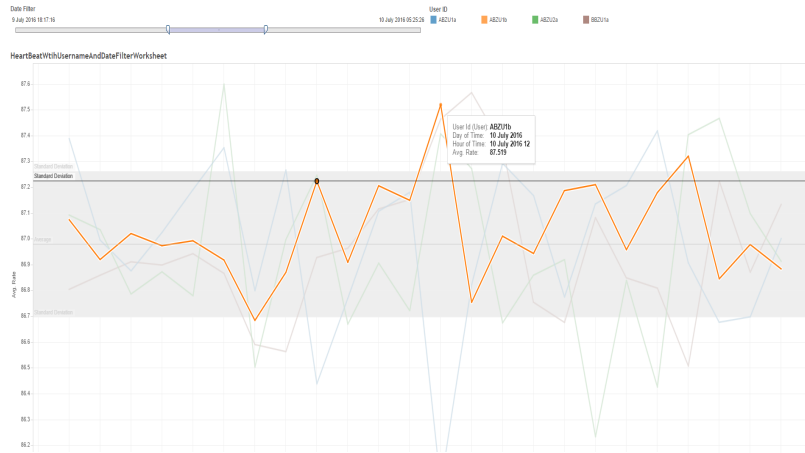
Google Glass experiment – Feedback on Feedback



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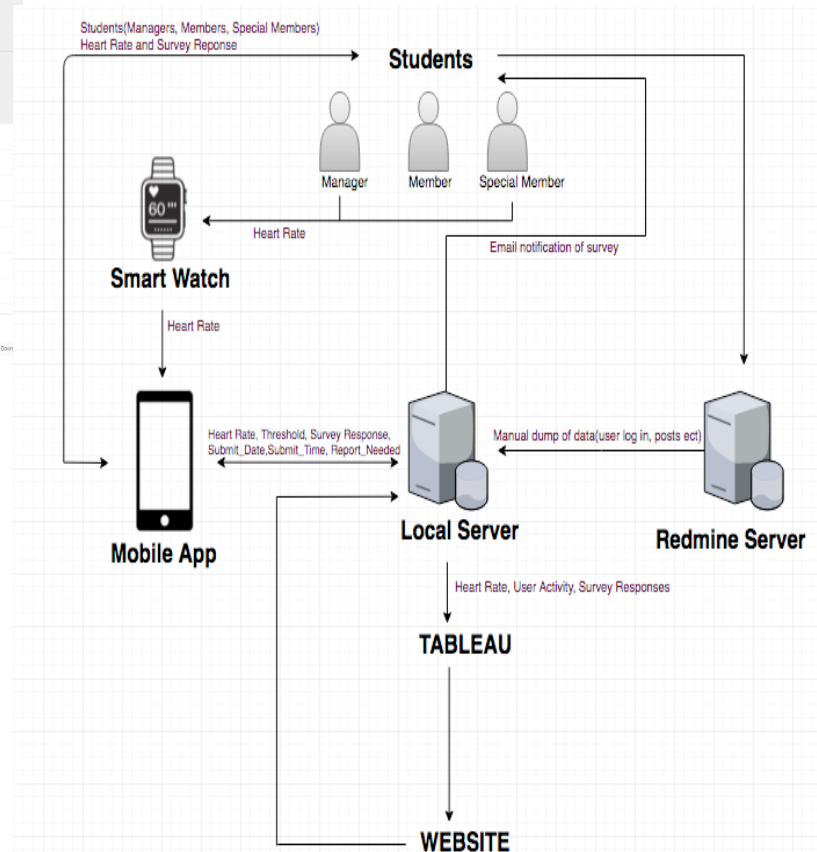
Smart Learning Environments - Architecture



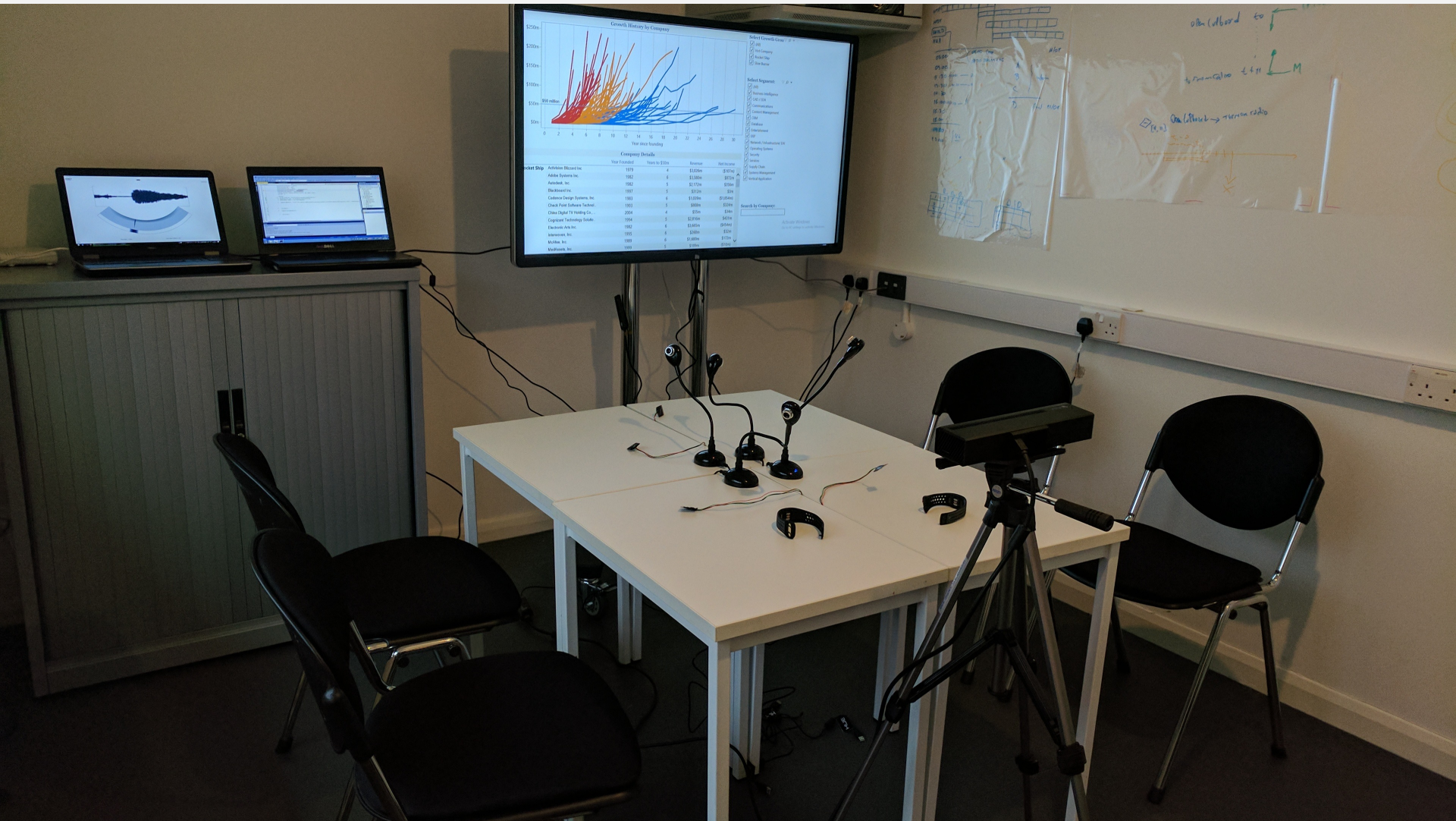
Amount of communication contribution per user on group 407

Date Filter: 25/10/2013 08:23:14 to 08/11/2013 16:18:45

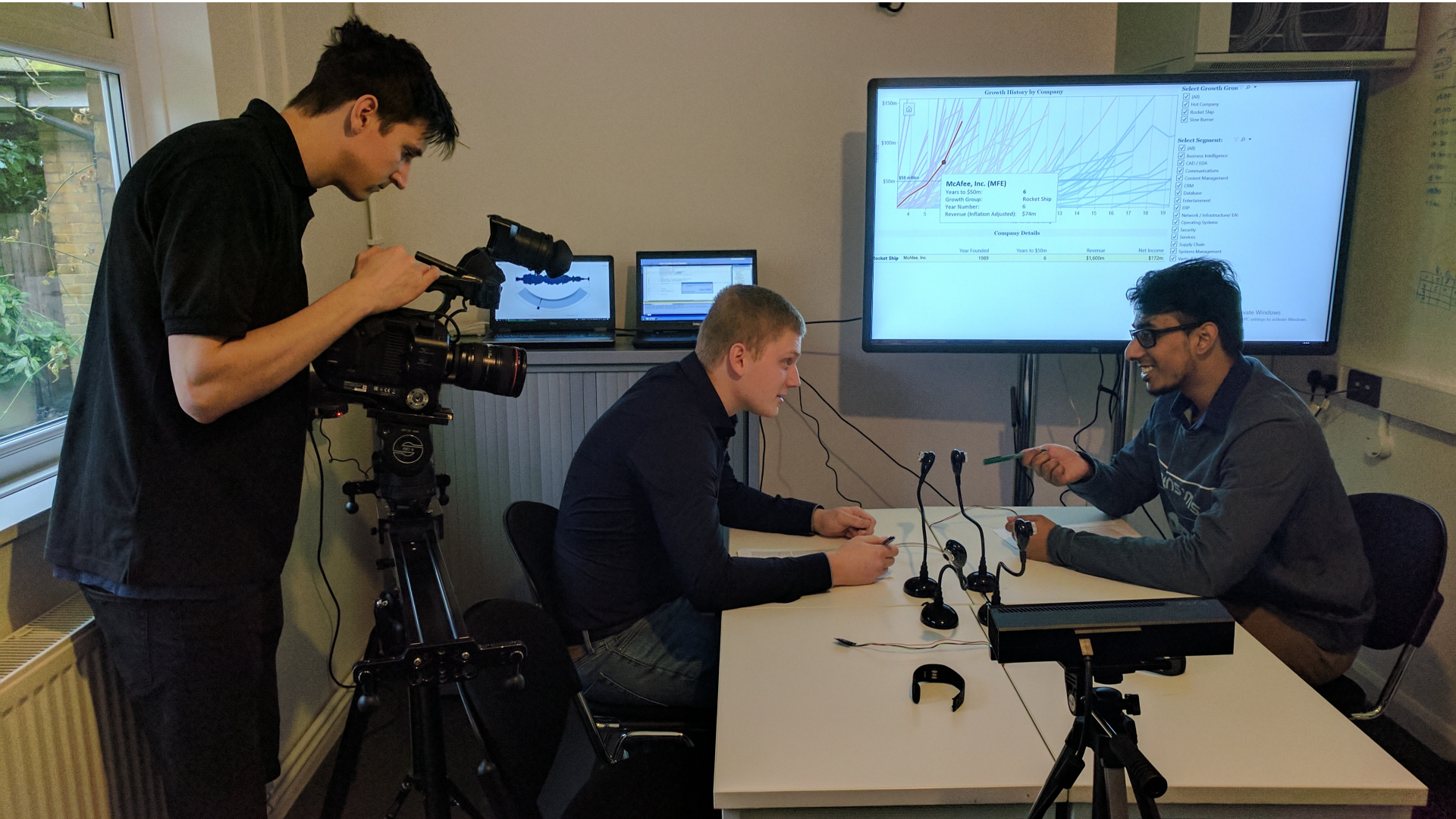
Groid	stuid (CommActiv.)	chat-group	forum	Amount of Contribution
407	764465	352	-	44
	811519	88	-	11
	824097	1,144	-	55
	M00220287	704	-	33
	M00292633	704	-	22
	M00313540	176	-	22
	M00334910	3,355	-	110
	M00359576	616	-	22



Lab set-up (sensors)



Lab set-up (optimum arrangement)



Lab set-up (project meeting)



Lab set-up (project meeting)

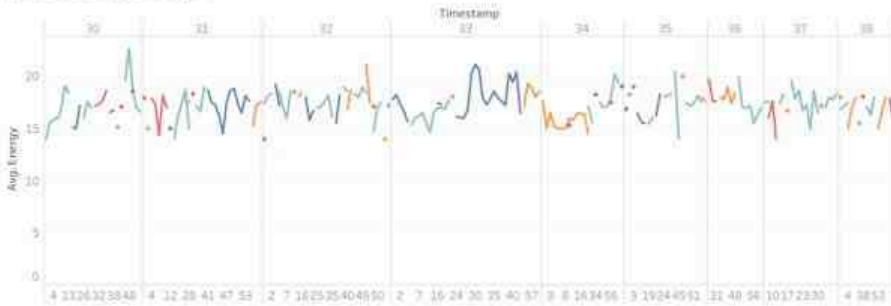


Lab set-up (presentation)

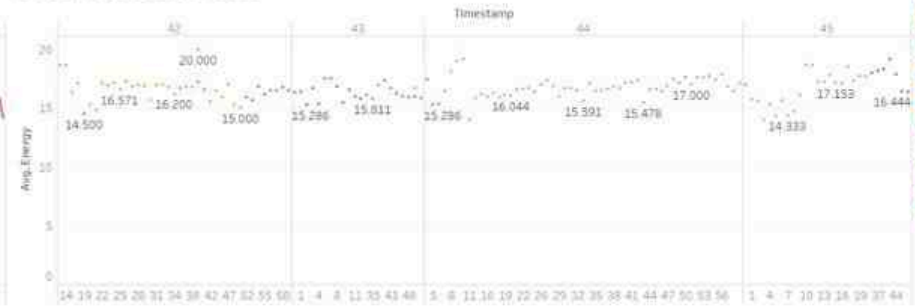


Dashboard view

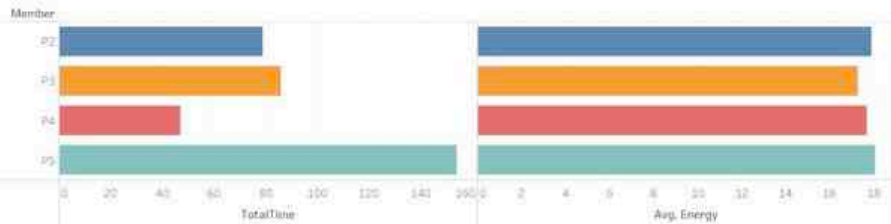
Audio Meeting Group 8



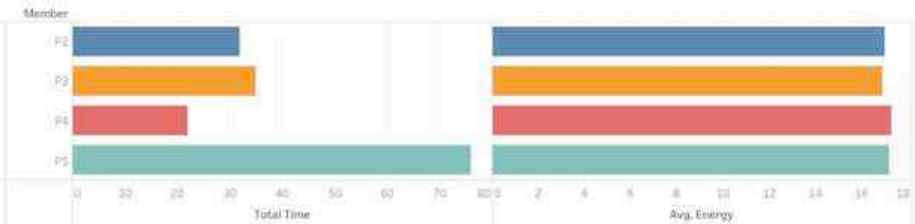
Audio Presentation Group 8



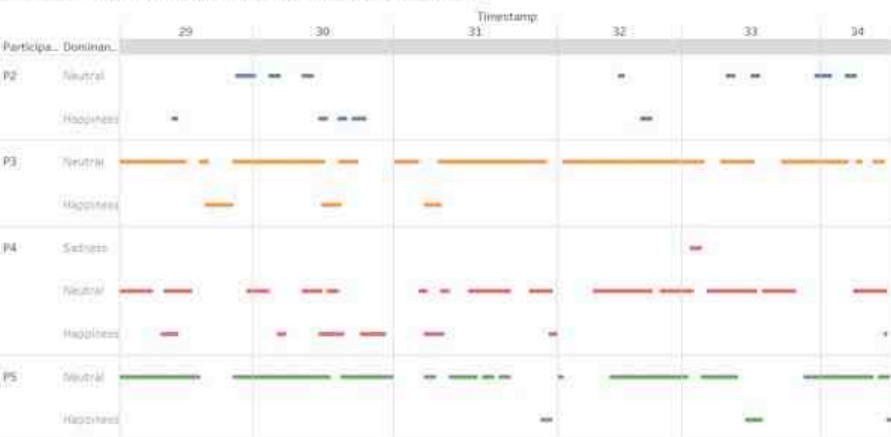
Time for each member [Audio Meeting] Group 8



Time for each member [Audio Presentation] - Group 8



Group 8 - Facial expression per participant, per second



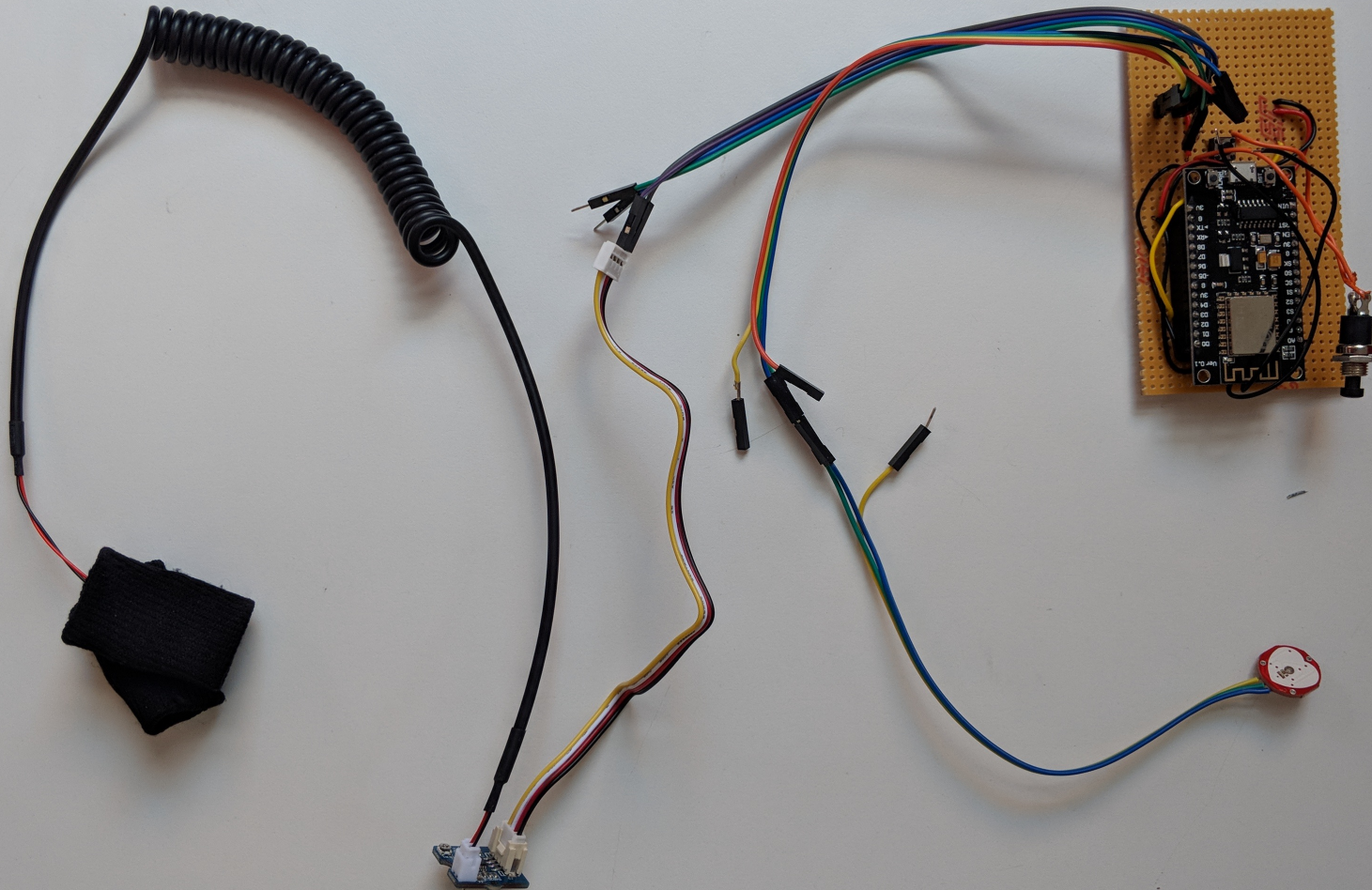
Group 8 - Sensor measure per participant, per second



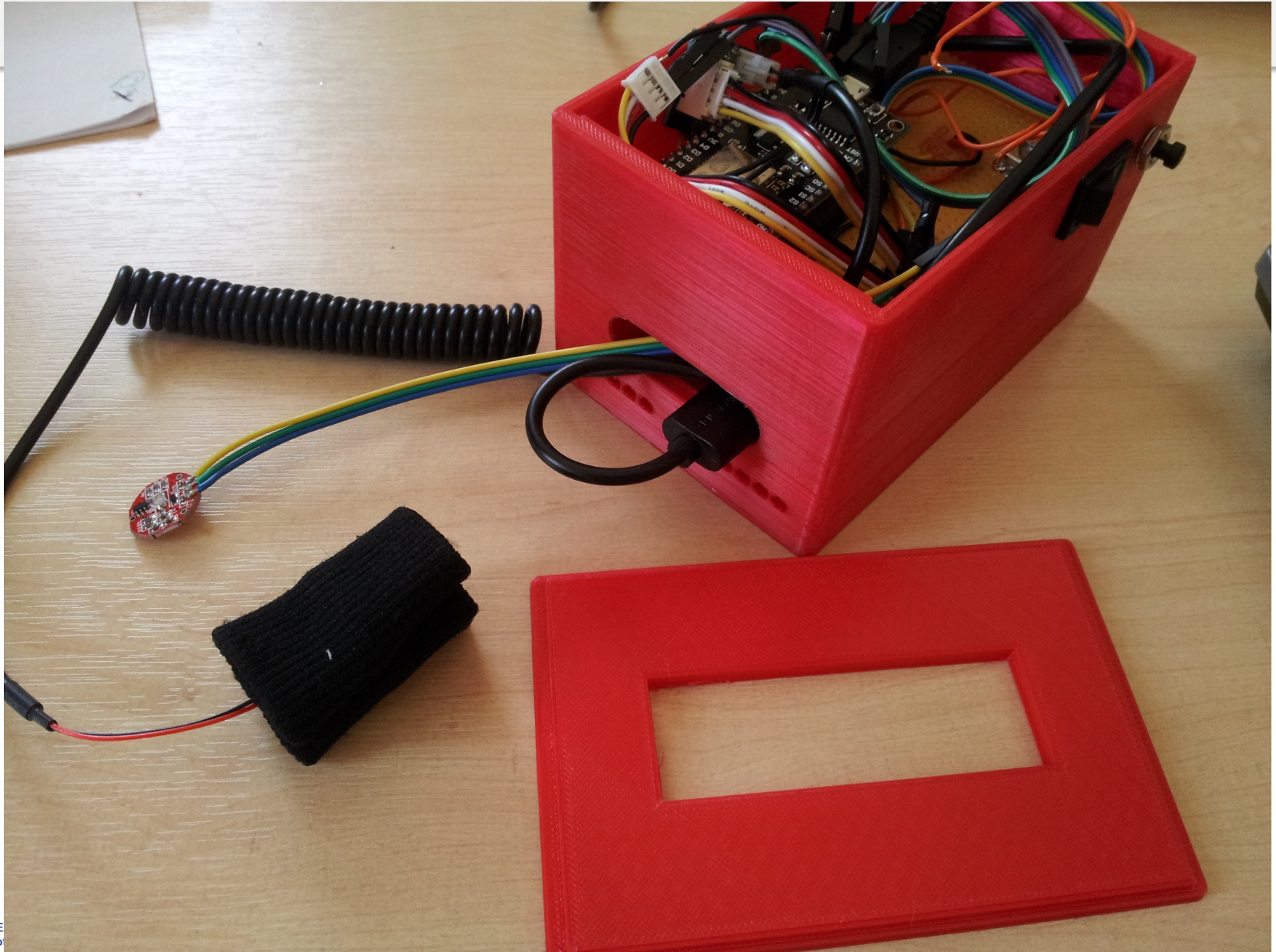
Total sensor's value for each participant



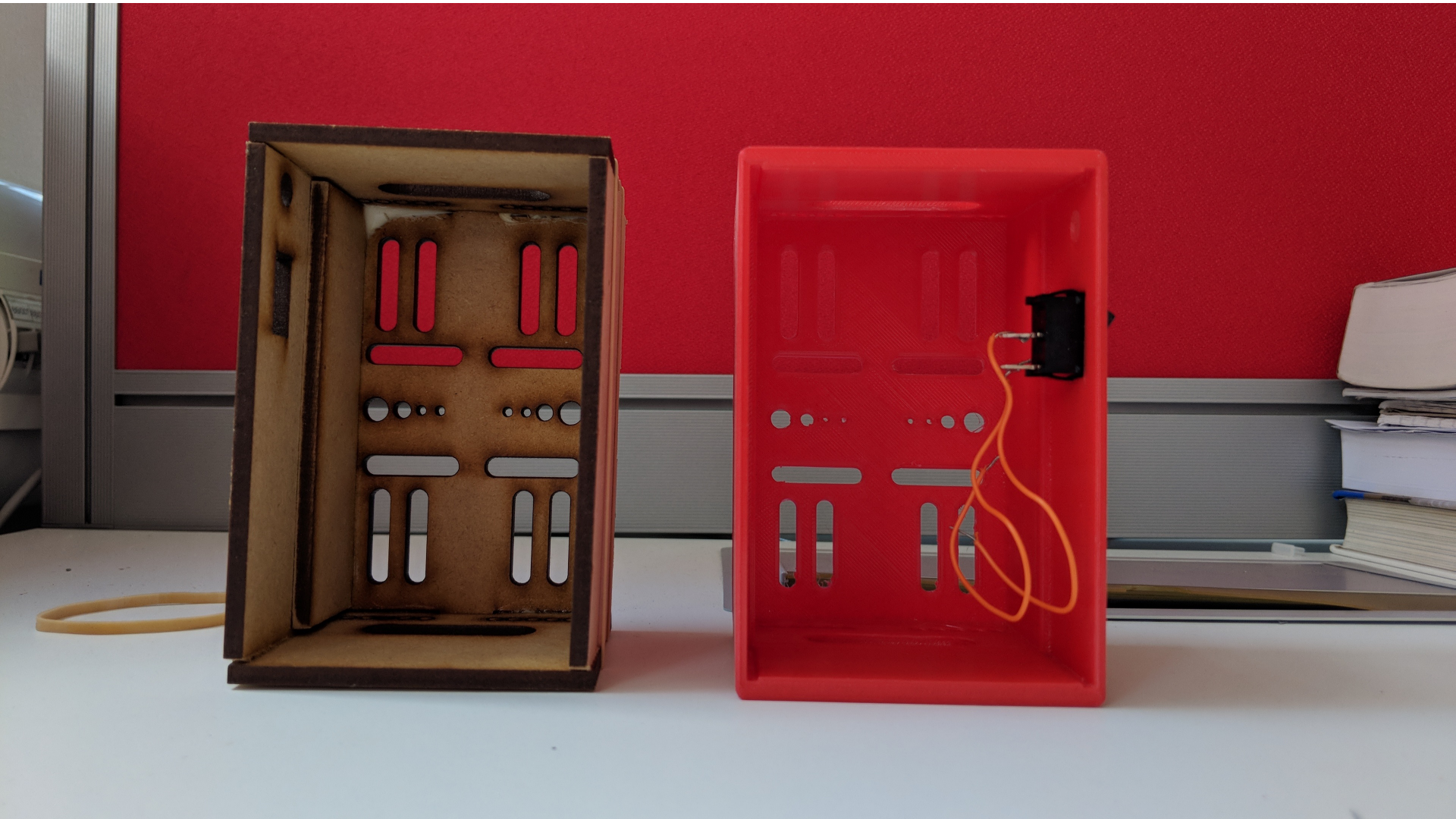
Cabling & components for stand-alone sensor



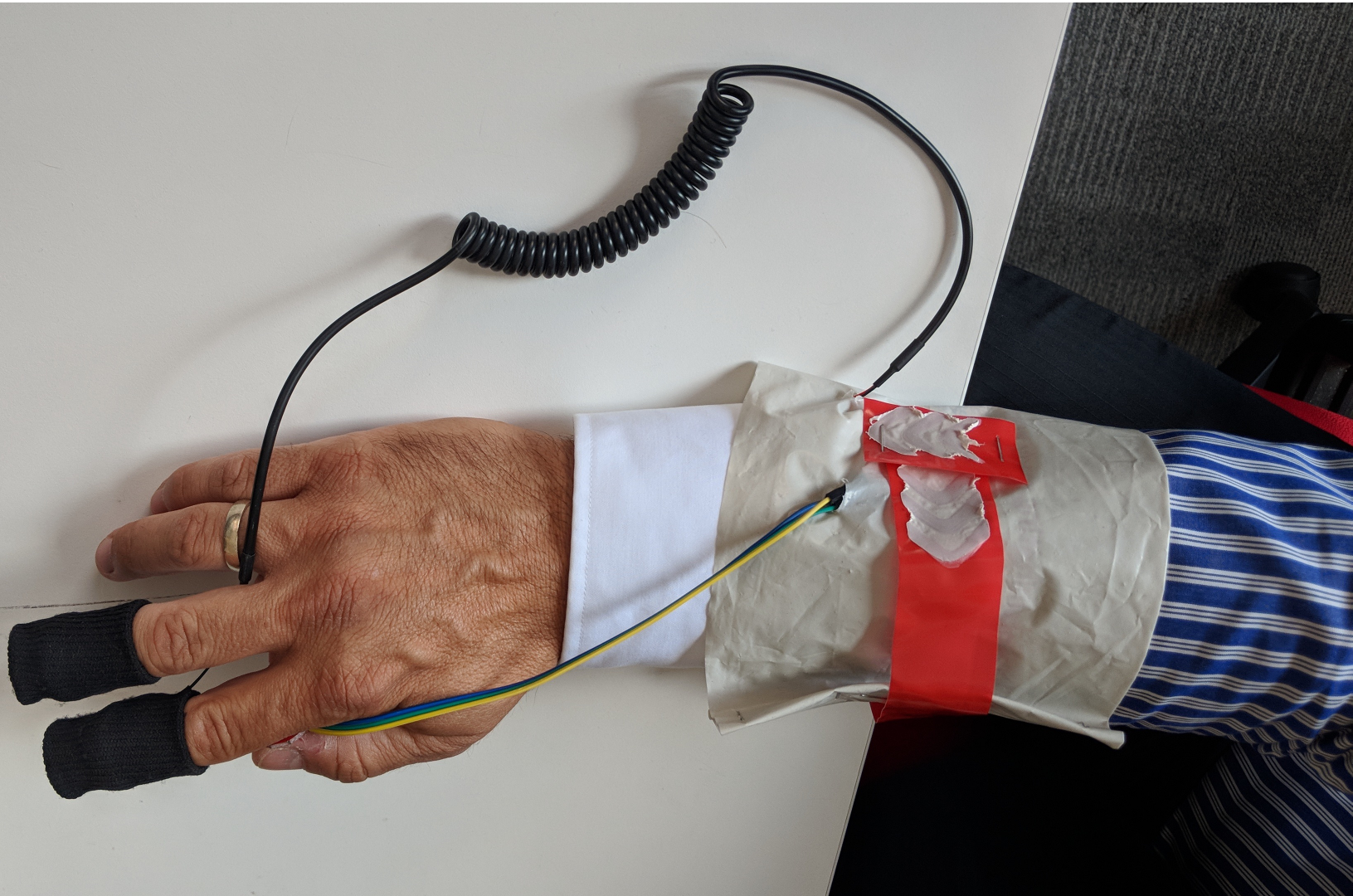
Hard-casing 3D print prototype



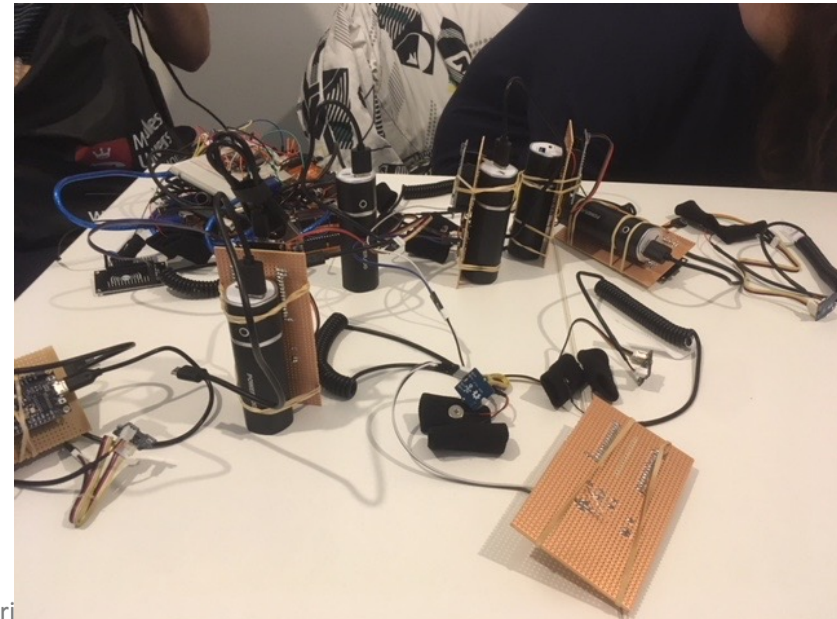
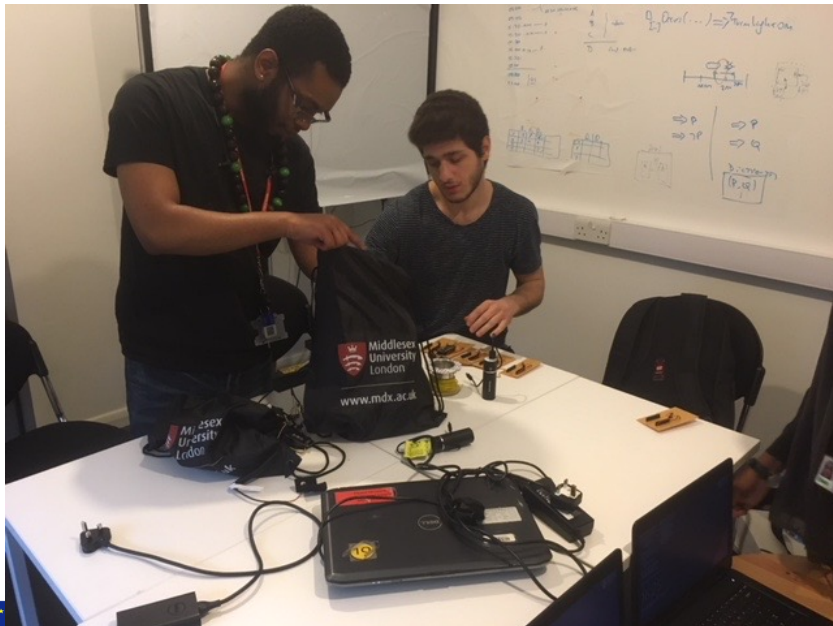
Hard casing – laser cut versus 3D print



Considering the use of a soft pouch casing (yes this is a plastic bag from TESCO's...)



Smart Learning Environments – The design team



g.dafoulas@mdx.ac.uk

Thank you for your attention!

