

**Royal College of Nursing &
University of Oxford:
Mind Boggling Medical History**

HSG

Summary Project Report

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Royal College of Nursing & University of Oxford

Mind Boggling Medical History Summary Project Report

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1. Exec Summary

Over the past 6 months, HSG have been involved in the Mind-Boggling Medical History project, gathering feedback on the card game and supporting the development of this product. This report summarises our findings from this period of consultation, drawing on comments, feedback and observations from the three focus groups and three play-testing sessions we have facilitated.

It is important to note that the majority of written responses have been positive towards the game, which provides encouragement that participants have enjoyed the experience of playing it. However, this report focuses on suggestions for developing this game in a way that can further improve its appeal and function as an educational resource or game.

2. Focus Group & Play-testing Session Summary

Three participant audience groups were chosen for both the focus groups and play-testing sessions; Teachers, Nurses and Academics. Detailed write-ups from each of these sessions have already been provided, these can be found in Appendix 1 & 3.

Sessions were run separately with each of the audiences groups. Participants were mainly sourced via the Royal College of Nursing (RCN) and the University of Oxford and their contacts for the focus group sessions. Two of the play-testing sessions were run as a part of open, drop-in events and the third was an organised session with teachers.

Each of these different participant groups shared several key responses to the game, however it was evident that their backgrounds highlighted specific benefits or concerns about the game.

2.1 Participant Summary

Teachers

While the majority of teachers recognised that the game could be used in a classroom setting, it was evident that teachers struggled to identify in what setting they would use it. Almost all the teachers we talked to said they would not have time to use the game unless there was an accompanying lesson plan. Added to this, the lesson plan would have to fit with either STEM specific subjects and within their specific modules; or it would simply be a ‘fun activity with no real purpose’.

Almost all the teachers we talked to expressed their concern over the language used; some language too advanced, others too problematic i.e. words that would cause disruption or phrases that would require too much explanation.

The majority of teachers we spoke to were very enthusiastic about the format of the game and felt they would use this format, but would have to develop their own content that was relevant to their classroom subjects.

Nurses

This group unanimously expressed that the game lacked nursing questions/topics and that the game included several questions/topics that were considered healthcare rather than medicine, but the game’s name and format suggest that it is not about ‘healthcare’. This point was discussed in detail; it raised concerns about public misunderstandings of healthcare and how the game would have limited appeal to nurses or perhaps even cause offense to nurses.

The nurses we spoke to felt that if the questions were focused on healthcare and nursing, the concept would work well as a digital format with large cohorts of student and practicing nurses as it could be played individually and could be expanded with new questions each term/semester.

Academics

Academics enjoyed the game and were positive about the ideas behind it. Those who participated in the focus group session enjoyed playing the game, but did not feel it was suitable for a younger audience. They came up with some useful suggestion for developing content, such as being mindful of statements that could be potential triggers for audiences and making sure there is no gender bias in the statements. There was initially a tendency for this group to

perceive statements about women negatively. Interestingly, this group generally spent the most time thinking about and discussing their answers, but were often incorrect.

Attendance at the academics play-testing group was disappointing with only one person attending. You may wish to consider trying to consult this group again, or finding a different way to do this that allows more people to respond.

2.2 Focus Groups

Three focus group sessions were completed as part of the project. Each focus group was conducted in a controlled environment with no more than eight participants at a time.

Each session focused on exploring the game's target audience, content and format. The following outcomes have been identified from analysing the results of all three sessions. See Appendix 1 for detailed reports.

Audience

- Participants recognised and acknowledge the game's potential use in attracting students and young people to have an interest in the medical profession or higher-education in STEM subjects.
- The game's target audiences had been set by the project team; Students, Nurses and the General Public. Participants at each of the sessions expressed that this range of audiences was too broad. A more focused product has the potential to be much stronger.
- It was felt that the game was limited in its cultural diversity and that this could limit young audiences of non-western backgrounds in playing the game or associating with the game.
- There was much debate over the general purpose of the game and what it hopes to achieve.

Content

- Each participant audience group reacted differently to the themes and topics.
- There was a good range of themes covered, with certain statements prompting amusement, disbelief and debate.
- Each group identified that there are some problematic or emotive questions that have not been handled with consideration to how players may react i.e. questions around pregnancy and 'successful births'.
- The language and terminologies used in the game presented each group with differing concerns. Those who were familiar with medical terminologies challenged the words used and those not familiar questioned the appropriateness of certain words.
- All groups engaged well with the game and the majority had an enjoyable experience playing it, although felt the content limited it to only being able to be played once.

Format

- At the focus groups, there were no instructions or fact sheets available to the groups. As such, the groups enjoyed working out how the game could be played but found it frustrating that the answers weren't readily available on the back of the cards.
- In comparison to established and popular games such as Trivial Pursuit or Cards Against Humanity, focus group participants did not feel the game had longevity. The limited number of cards meant that once played, they wouldn't be able to play the game again.

- Each participant group did not see how the game in its present format could be played with large groups such as in a classroom or lecture theatre.
- The format of the game was manageable and largely understood, but the process of finding out the correct answers was felt to be cumbersome.

2.3 Play Testing Results

Three play-testing sessions were completed as part of the project. The following audiences/users were chosen for the sessions; Teachers, Academics and the general public. The play-testing session environments varied; one held in a controlled environment, one in a busy open event held at the RCN as part of the Medical Museums Market Place event, and the last conducted at a 'Teacher Late' evening event held at the Science Museum.

Outcomes from the session were collected through note-taking and a paper questionnaire (see Appendix 2). The questionnaire focused on the game's format, content and the players' game experience. The following outcomes have been identified from analysing the results of all three sessions. See Appendix 3 for detailed reports.

Format

- It was evident that despite the game's instructions, there are a variety of ways the game can be played. Some participants elected a 'quiz master', some took this position in turn, others played individually and then came together at the end, some played a theme against each other and some played each question as a team with no competitive element. This flexibility was considered to be a positive thing, allowing the game to be adapted to different situations and personalities.
- The 'board' was introduced at the play-testing sessions and did have an impact on the way players interacted with the cards. However, the board was considered too small and did not allow for players to play as a group or against each other.

Content

- In general, the content was considered to be a good mixture of entertaining, challenging and interesting statements. Many topics provoked discussion and debate amongst groups and some individuals left feeling that they had learnt something new.
- Many expressed a confusion regarding the terms 'current', 'disproved' and 'fictional'. The most difficult distinction appeared to be between 'disproved' and 'fictional', but others made the point that 'current' is not the correct term for all the statements considered to be in this category. In practice, most referred to the statements as 'true' or 'false'.

Experience

- The environment in which the game was played had an impact on the players' experiences. The teachers were testing the game in a very social atmosphere with alcohol and loud music/talking. This affected the way they interacted with each other and the game; less debate and contemplation over the questions. Many also played as themselves rather than thinking about how their students would engage with it.
- It was observed that when players chose to use a 'quiz master' to play the game, this produced more debate and discussion about the questions as players appeared to work out the answer together as a team. This meant there were more opportunities for the players to challenge the question and present their ideas to each other. When the game

was played with a competitive element i.e. one on one, there was a distinct lack of discussion and debate.

3. Key Areas for Consideration

1. **Purpose:** What is the game's purpose? This was a key question raised at the sessions. Participants were unclear what they were supposed to have taken away from the game and why they would play it.
2. **Audience:** Who is the game for? Despite participants being aware of the game's target audiences, many of them struggled to understand how the game could meet the need of such a diverse range of potential audiences.
3. **Demand:** Who has a need for it? If the audience is considered too broad and there isn't a clearly defined use for the game, it will be difficult to tap into a clear demand for the product.
4. **Clarity:** What are the differences between 'Current', 'Fictional' and 'Disproved'? It was a consistent theme throughout the focus groups and play-testing that players struggled to understand the difference between 'Fictional' and 'Disproved', particularly with certain questions. Players often changed the answers to just 'true' or 'false'. Some of the statements considered as 'current' are true, but not current practice.
5. **Language:** Who are you writing for? With such a broad target audience, the language used in the game changes throughout; sometimes for a highly educated audience, sometimes clear and simple.
6. **Format:** How will this game be played and where? Players found the game 'fiddly'; trying to identify the different themes without clear colour coding, a large stack of cards with a shiny surface, a small 'board' to layout the cards and no scoring system.
7. **Consistency:** It is important to think about consistency across the themes, ensuring they are the same level of difficulty and contain the same number of statements.
8. **Design:** What do you want the game's design to say? Participants felt the 'game pack' of cards, A4 instructions, A4 answer booklet and A4 'Further Information' was cumbersome and seemed a lot for a simple card game. There were discussions about the look of the game and how the branding was important to whether it would be seen as an educational tool or a cross-over entertainment game.
9. **Digital:** What does a digital game add to the experience? Although this version of the game was not available for testing, it is useful to think about what purpose this can serve and how it will fit alongside the physical version of the game.
10. **Answers:** What do you want people to remember? From our observations and direct feedback from participants, the answer booklet proved very problematic. As the cards tended to be shuffled and they are not numbered to correlate with the answers in the booklet; it was time consuming and confusing for players to flit between pages to find the one card question they wanted the answer to.

4. Recommendations for Development

1. **Purpose:** There needs to be a clearly defined desired outcome of playing the game. This should be as specific as possible i.e. to encourage 16-18 years olds to move into HE in STEM subjects.
2. **Audience:** This needs to be pinned down to one target audience. From what we could see, the game had an appeal to the public but with limited learning. Teachers were interested in the game's potential use but without testing the game with school students/young people it isn't possible to indicate if they should be the target audience. Further testing should be carried out with this group if they are intended to be the key target audience.
3. **Demand:** People don't buy into or use a product because they either don't understand it, trust it or they don't have a need for it. Once there is a clearly defined desired outcome and a specific audience, it will be easier to tap into that market to identify the 'need'.
4. **Clarity:** Statements need to be checked to ensure that they clearly fit under the headings 'current', 'disproved' and 'fictional'. If this is not the case, then statements need to be altered or removed or a simplified 'true' or 'false' version of the game could be considered.
5. **Language:** It is recommended that a proof-reader is brought in to look at the language and tone of voice for the game and that they use the target audience and purpose as the guide to edit content. Where terminologies cannot be simplified a glossary may be useful.
6. **Format:** It is suggested that if the card format is kept, that the instructions are formatted to either a folded (to the size of the cards) sheet or simplified to 'options for play' on different cards. From the play-testing the following three play options could be used: One card called 'One-on-One', another card called 'Quiz Master' and one called 'Team Time' – each with simple instructions that fit on one side.
7. **Consistency:** Keep the same number of cards per theme and ensure that all themes carry the same level of difficulty.
8. **Design:** The overall look and feel of the product did not provoke much comment. It was felt there could be a clearer visual distinction between the different themes. It may be worth considering if a more striking design would be appropriate.
9. **Digital:** We did not gather feedback on the digital version of the game as it was not available for testing. Any digital version of the game that is developed should have a clear purpose that stands alone from the physical version. It should also be tested to ensure it is accessible – this would be useful as the physical version i.e it is not currently accessible to those who are blind or partially sighted, or those who have problems with physical coordination/movement.
10. **Answers:** Participants on almost every occasion expressed that they expected the answers to be on the back of the cards like many other card games on the market. It is suggested that if answers can be simplified down to sentences that fit on the back of cards, this would be a change that directly reflects the feedback from the groups. A proof-reader could advise on this. A 'further information' booklet could still be used or perhaps linked to the digital bank of resources for those who wish to find out more.

5. Appendices

Appendix 1. – Focus Group Session Reports

Focus Group – Museum of History of Science, Oxford, 21 July 2017

5 attendees, session led by Debbie

Initial responses to the game:

- Fun!
- Though-provoking
- Encourages conversation

- Overall tendency to lean towards putting statements in the 'disproved' pile. I think this is viewed as the middle ground /least embarrassing option as almost neither right or wrong – a safe bet.

- A couple of statements were considered to be obvious, ie: smallpox being eradicated = current, but this a positive. Good to have statements people feel sure of to boost confidence.

- Gender bias: discussion around how there are numerous statements relating to women (nervous traits being caused by displaced uterus, menstrual irregularities causing insanity, removal of clitoris, women have smaller brains than men, sights seen during pregnancy, drinking beer improving a woman's fertility, ovaries, sperm not entering a 'female womb') and not many relating directly/solely to men. Statements relating to women generally seen to have a negative association.

Audiences:

- Very much considered to be suited to an intelligent audience, with prior knowledge of medical history.
- Could easily be made fun for a younger audience.
- Feels like there is quite a focus on genitalia at the moment – could be awkward to play in family situations. This may lend itself to A-level / teenage audiences.
- Suggestion of a separate version of the game to be used in PSHE (personal / social education) classes in schools as an ice breaker – good way in to discussing potentially awkward or embarrassing topics.
- Look for direct links with curriculum, ie: GCSE History of Medicine.
- Could broaden into wider 'weird science' as a topic that is more comfortable for a wider range of people.
- Currently not suited to under 16s.

Content:

- Language was a key point: needs to be simpler for under 16s, but also consider audiences where English isn't the primary language (schools, museums, nursing students). Perhaps keep a more 'high brow' version as well, as some people will enjoy the challenge of this.

- All agreed it was necessary to have two separate games for older and younger audiences, but we explored this a bit further in discussions about the format of the game.
- It wasn't felt that the themes were necessary. They were unclear and didn't add anything. Other themes may work better, such as drawing out sex as a separate theme so that people can choose whether or not to engage with it. Could also offer extension packs to the core edition to increase the life of the game. Felt that removing the themes would enable the game to have a longer shelf-life – harder to remember the answers as more statements to engage with.
- Suitability of content: discussion around some content being potential triggers to users and how we deal with this. All felt it was our responsibility to acknowledge this in some way if the game wouldn't always be facilitated. Could be through suitable packaging (ie: Horrible Histories style so people know to expect crude content), not on the box, parental guidance. Needs to be done in a way that isn't overly scary, so not unnecessarily off-putting.

Format:

- All felt they wanted immediate answers. More of a quick-fire question/answer approach.
- General consensus = best to have answers on the backs of the cards, but in a format that meant it wasn't easy for the other person to read / cheat!
- Include an explanation about fictional statements as well – presumably most of these are based on semi-truths or superstitions.
- Have a short explanation of each statement on the back of each card. Don't make it too easy to see the answers (ie: keep statements a similar length).
- Liked the format of Trivial Pursuit game, with multiple options for questions on each cards and answers on the back. Font size an issue though.
- Could use the TP format, but include different levels of difficulty on each card rather than different themes.
- Top Trumps cards were a good size. Liked the rounded edges, and possible inclusion of images too. In general images were felt to be a positive addition, but not suited to all content.
- Led into discussions about different ways of playing the game – could you copy the two truths and a lie format? Have three statements on one card, where you pick which is current, disproved and fictional. Could also add extra layers of detail, eg: <statement x> is disproved, but could then ask additional questions, such as 'what date do you think this was from?'.
- Could use a story-telling format, so use statements as the basis of creating a story explaining how you came to believe x is true. Potentially loses the educational benefit. Could look at linking disproved and current theories, such as finding out how the two are related / what led to one theory being disproved.
- Overall it was felt that different variations on the game would be good to allow increased potential for repeat use and more flexibility for using with different audiences.
- Overall presentation of the game should be small and simple. Pocket-sized and easy to pack in a bag and take-away, especially if for Museum visitors as they are likely to be continuing their visit elsewhere.

- Top Trumps hanger made it convenient for hanging by a shop till so could be a last minute purchase.
- Around the World in 80 cards box was a neat format, good size and attractive.
- Could think about a container that will also help facilitate the game – ie: cassette holder style, which would cover the answers for other players.
- Should look to sell in Museum shops and places like Waterstones.
- Price point should be below £10.

Digital:

- Liked the idea of a simple digital version of the game.
- Should include stats, such as % of people who get each question right.
- Does it need a feedback forum to allow people to debate the statements? How would this be monitored?
- Could we email players to gather feedback?
- Consider whether an online version of the game would impact on sales of the cards. How would the different audiences be for each and how would they work together?

Project: Mind Boggling Medicine**Date:** 11th September**Session:** RCN Nurses Focus Group (Cara Sutherland)**Attendees:** 8**Session Structure**

This session was changed slightly from the Academics session at the request of the client. The session focused less on the Format and more on the audience, content and game play. The information below is a breakdown of the session outcomes and the responses from participants.

Session Outcomes

Game play – The group was split into two groups/teams. One group was given existing games to play while the other group were given the MBM game. Each group/team had 15 mins to play the games and then they swapped, giving each group/team the opportunity to play and discuss a whole round of MBM. Answers were then given to the whole group to see who had won the game.

Observations

Each group played the existing games with ease and were both drawn to the 'World Game' as a simple question and answer card game. They all liked the 'knowledge testing' element and were all interested in the competitive element and the instant gratification of the answer being on the card. One group/team chose to have a 'quiz master' (Group 2) reading out all the questions and providing the answers, while the other group (Group 1) chose to take it in turns. When playing the MBM game the groups kept to this same structure.

As the MBM game has no answers provided on the cards the 'quiz master' in Group 2, the 'quiz master' joined in the discussions and helping with identifying an answer. Both groups/teams enjoyed the subject matter and the content but expressed confusion over how to play the game using the three categories i.e. both groups found themselves saying 'true' or 'false' instead and had to come back to the answer categories. They also expressed confusion over the design of the card i.e. the card appears to give a fourth answer option with Fictional?/Current Model?/Disproved Theory?/You Decide). Some of the group felt the layout implied there was a 'you decide' category.

Both groups/teams laid the cards out on the table into the three answer options but when I provided the answers at the end of the game play, both teams couldn't remember which pile was which; leading to a discussion about either numbering the cards and having an accompanying 'answer sheet' or a board to lay the cards onto in groups.

The majority of the participants had concerns about the terminology; whether it should in fact be 'Healthcare' not 'Medical'. Discussions focused on the progressive nature of healthcare and that the game did not only focus on historical methods/practices, there was a concern that students, the public and nurses may be encouraged by the terminology to use 'outdated' language and perceive contemporary healthcare is 'singular' rather than 'progressive'.

Participant Comments

'It felt like it was trying to catch me out or trick me, like QI [the television show] but I quite like that.'

'It's fascinating but frustrating as I wanted to know more about the answers at the time of playing rather than having to wait until the end. It seems the only way it could be played is with a facilitator who has to go through all the information at the end.'

'I have a problem with the 'medical' word as it's not representative of everything that we do as nurses and healthcare professionals.'

'If one of the audiences is nurses, then I think many of them may have a problem with the word 'medical'.'

'There aren't any questions in here about nursing.'

'I didn't know if I was playing the game correctly. It shouldn't have to have someone explaining it for it to work. All the successful cards games out there don't come with someone telling you how to play it.'

'These aren't nursing questions, they are healthcare and medical specific questions.'

'It should come with more information about the answers in a way that the general public can use it.'

Audience - The whole group were asked to consider the three audiences that were presented to them at the beginning of the session by the project lead. They were asked to consider the MBM game's benefit and learning outcomes that could be possible with development for each audience and what, if any, concerns they had for each audience when the game is used in its current form. Below is a breakdown of the main themes that emerged from the task.

GCSE Students

Benefits/Learning Outcomes:

- Attract young people into working in healthcare services
- Widening participation in the sciences beyond the syllabus/curriculum
- Encourage students to listen to each other and to make joint decisions
- Encourage students to debate contemporary healthcare practices
- Encourage group and individual research

Concerns:

- Some groups/individuals may find the language/content and tone of voice offensive
- The need for a facilitator will be crucial with this group and therefore a 'one size' fits all approach may be short-sighted.
- There needs to be a greater mix of questions to encourage nursing as a profession give that it is made by RCN.
- Lack of structure to the game at present may encourage disruptive students and limit the amount of engagement possible with a large class.
- Some of the language and terminologies used are too advanced/specific for this age group eg: 'faecal' rather than 'poo' which is used in NHS adverts.
- Some felt that it should be targeted at a specific GCSE audience such as Science courses, as simply 'GCSE' felt too broad.

Nursing Students

Benefits/Learning Outcomes:

- Encourages students to question existing practices and to think about why practices become disproved/outdated
- Could turn a standard lecture into a discussion which leads nicely into group activities
- Acts as a good conduit for evidence based learning by encouraging students to follow up with further research and how that can influence their practice
- Encourages debate and critical thinking
- Encourages students to question what they are being told and what they have read in the past
- Could support students who struggle with evidence based learning by offering a different approach
- Provides students the opportunity to understand some of the journeys healthcare practice has been on

Concerns:

- The group questioned why it was only focused on Nursing students as they felt it could apply to medical and AHP students
- A number of participants felt that if one of the purposes of the game was to support learning for Nursing students but didn't offer specific nursing care theories/practices and therefore may alienate a key audience
- There was a general concern as where the evidence for the answers have come from i.e. not offering a direct reference to source material may encourage poor research methods/practice to students
- Some of the group felt that the need to have a facilitator may limit the options for the games use
- The majority of the group felt that the physical game would struggle to be used and enjoyed when there are large numbers of Nursing students i.e. 250 strong cohort and/or a nursing intake.

General Public

Benefits/Learning Outcomes:

- Offers and insight into changing healthcare practices
- Could offer an opportunity to dispel myths and misconceptions that the public may have about contemporary health issues
- An interesting and educational offer to the public
- Could feed the curiosity of weird facts

Concerns:

- At present it was felt there weren't enough questions or themes
- Not enough of a team based challenge for a non-subject specific audience
- The whole group felt that the language may be unsuitable for the general public unless there was a glossary provided and in that case it may seem too onerous

- It was felt by some that for the general public there wasn't enough of a game i.e. there should be more family orientated formats like a board and pieces
- There was a strong concern that the lack of immediate gratification with the answers available in after each card would limit the interest and may in fact affirm some of the misconceptions
- In its current format they felt it needed to be explicit that there needs to be a 'question master'

Content - Ideas around new content was covered in the 'brain-storming' session after the focus group. Some of the content comments have been covered above in the Audience section, however the comments below expand on some of the content suggestions.

Participant comments

'It's important that there are nursing specific questions as this is a key audience.'

'Maybe it could include questions about comparative practices like the practices before understanding germs and the way we protect against germs now.'

'It should include a broad range of questions about healthcare so right from porters and domestics to the research into medicine etc.'

Digital resource and Format suggestions - As agreed, this session did not focus on format however the group began to consider development of the physical game when encouraged to discuss the digital possibilities of the game. A list of the key ideas are listed below.

Physical game format

- A glossary may be necessary
- Explicit themes to the rounds such as Research, Wound Care, Diseases, Mental Health etc.
- Utilise characters to play as i.e. historical characters such as Florence Nightingale or Fleming.
- Clearer differentiation on the cards between the front and back and not to confuse the audience by appearing to have four options (Fictional?/Current Model?/Disproved Theory?/You Decide), which is compounded by the four colours of the 'wheel' on the card (blue, teal, green and purple).
- Offer different editions/updates like with Trivial Pursuit
- Offer a 'red herring' option – it might be disproved now but might come back into practice in the future
- Colour code the answer options
- Answers should be on the back of the cards like other card games or if done with a 'quiz master' there needs to be more rounds and less questions per round to prevent the game 'going on too long' or people rushing through just to find out all the answers at the end

Digital development

- Digital offers the option of different layers to the game by clicking through links to 'find out more'
- Offers an immediacy to further information

- Can be played by an individual competing within a wider group such as a student competing against the rest of a cohort – similar to the existing voting system used in online gaming
- Cheaper and more sustainable than reproducing new editions or additions to the game
- There was a concern that there would need to be centralised administration to a digital version and a review date as practices and developments happen quickly within healthcare
- The physical game could utilise QR codes to expand on information using the digital framework while playing the physical game
- An app was thought to be more useful so that all the audiences can play individually 'on the go' rather than just at a desktop/laptop
- Profiles could be created for each player online and could be used to add to the content on a periodic or regular basis.

Focus Group – Royal College of Nursing, 28 October 2017

4 teachers, session led by Cara

Session structure:

This session followed the same structure as the RCN nurses focus group, with a focus on audience, content and game-play. The same set of cards were also used, despite a more developed set being available. This decision was taken to ensure consistency of comments.

Session Outcomes:

Game play & observations

Travel game

- The group were initially given a travel game to play, which consisted of cards with multiple choice answers on them.
- The teachers chose to play this game in teams and compete against each other.
- They invented their own rules and added their own suggestions, for example setting a time limit for the game.
- It was clear they enjoyed a challenge, always picking the hardest questions and getting excited by the competitive element.

Mind-Boggling Medical History game

- The group worked out the rules of the game quickly.
- Initially didn't know how to play and two participants used google to find out the answers - Teachers enjoyed the 'amusing' statements.
- There was a more serious atmosphere than with the travel game.
- They took a group discussion approach to playing the game, removing the competitive element.
- Commented that the cards didn't fit in the columns.- Of the 10 cards they chose, they got 7 correct.

After playing the game, the teachers were asked to feedback their initial comments:

- First impressions were that it seemed daunting without any instructions.
- They found the terms 'fictional', 'disproved' and 'current' confusing and mainly focused on 'true' or 'false'.
- They felt it was important to have 'Easy', 'Medium' and 'Hard' options for education purposes.
- The group missed the competitive element, but did enjoy the discussions they had, especially regarding the statements they found amusing.
- It was felt that it would be better to have immediate access to the answers, and it was suggested they were on the back of the cards.
- Thinking about children playing, it was felt the language would be too difficult. The teachers also drew on a lot of background knowledge to play the game, and felt that children wouldn't be able to do this. A 'true or false?' version of the game was suggested for younger audiences.

- Other suggestions included introducing themes and adding a timed element to the game.
- Another option put forward was to have a quiz master version of the game where someone would read the statements out. The cards could then have the answers on the bottom and include helpful hints the quiz master can give and additional interesting facts.
- The group then went on to discuss different uses of the game in a classroom setting, such as introducing a kinaesthetic element to it, ie: giving statements to children and giving them 30 seconds to group themselves into the different categories. It was also suggested that the game could be used in class to inspire creative writing.

Audiences:

The teachers were asked to think about the individual audiences for the game and come up with suggestions for what they think would work well and what would not work for each one.

Students

Pros:

- humour is appealing to students
- the game is open to a variety of audiences
- a good cross-curricular activity (history, biology, English)
- an interesting resource for ethics and debating for sixth form students or high ability sets- could use as a quick fire 'true or false' exercise which leads into a longer debate.

Cons:

- the humour can detract as students may be too young to take it seriously
- would need to be age appropriate for different classes
- needs an incentive / competitive element
- doesn't allow for developments in science- requires a high level of prior knowledge. - limited cultural diversity.

Nurses

Pros:

- nurses will have previous knowledge and experience
- a fun way of revising
- leads to ethical debates
- relate to case studies and encourage more research
- covers obscure and abstract concepts
- understand the geographic / cultural / historical context
- good for staff CPD and team-building
- develops an analytical approach to current medical practice.

Cons:

- needs to be more specific for revision purposes- why would nurses play this?

- is this the most valuable use of their work time / free time?
- needs to be codified in terms of instructions to encourage debate.

General public

Pros:

- could be really good if explained as a debate / risqué / specific.

Cons:

- unappealing format and design
- rules and context
- rebranding – decide on audience
- prior knowledge needed. Requires a level of education / interest- not competitive.

Content:

As requested, we moved away from focusing on the format of the game and instead focused on the language used, asking the teachers whether they felt this was appropriate for use with students.

- needs a clearer idea of target audience. Can't work for everyone.
- the statement 'Women have smaller brains' is the most interesting. It's clear and uses simple language.- Could use academic language with 15/16 year olds who want to go into medicine to show them how it would look.
- more current but shocking statements would be good.
- examples of difficult words include 'retracting', 'exclusively', 'disproved theory', 'current practice'. Too much jargon.
- scientific language such as 'faecal' is too alienating, but 'poo' is too funny to use.
- needs a glossary for students and possibly some adults.
- needs context and a training manual.
- why would teachers use it?
- current model and language are difficult to understand.
- type of school students needs to be considered. What if English isn't the first language?
- some statements are ambiguous, ie: 'semi-conscious' (what does this actually mean?), 'planting'. Needs to use clearer and more direct language.
- could work for GCSE students as a revision exercise, but needs before and after resources.

Mind Boggling Medicine**Play-testing Questionnaire**

Version of the game played (please circle): Card / digital

The questions below are to help us develop the Mind Boggling Medicine game and to ensure that we are meeting the objectives of the game. Some of the questions will require you to circle your answer and others will ask you to write your answers.

Please circle the theme/s you played today:					
Society	Mind	Body	Animals	Treatment	Sex & Reproduction

Society	Mind	Body	Animals	Treatment	Sex & Reproduction
---------	------	------	---------	-----------	--------------------

1. How easy was it to understand the game's instructions?

Very Hard	Hard	Average	Easy	Very Easy
-----------	------	---------	------	-----------

2. How easy did you find the questions?

Very Hard	Hard	Average	Easy	Very Easy
-----------	------	---------	------	-----------

3. How would you describe the experience of playing the game? You can circle as many of the words as you like.

Entertaining	Boring	Educational	Confusing
Upsetting	Fun	Uncomfortable	Engaging
Fascinating	Patronising	Inclusive	Unoriginal

4. Are there any other themes or topics you would like to see used that were not included in the game?**5. On a scale of 1 – 5, how well did you understand the themes of the game?**

Did not understand				Completely understood
1	2	3	4	5

6. How would you describe the language used in the game? Please select one word.

Confusing	Academic	Clear	Engaging	Simplistic
Other	Please specify here:			

Please turn over.

7. What did you like most about the game?

8. What didn't you like about the game?

9. Would this game appeal to you? Y / N

10. Which of the following best describes your interest / involvement in the game?

As an academic	As a museum professional	As a nurse
As someone interested in medical history	As a teacher	As a student

11. Any other comments?

Project: Mind Boggling Medical History**Date:** 25 & 28 October 2017**Session:** Play-testing**Respondents:** 27**Session Structure**

Play-testing held at Museum of the History of Science in Oxford with one academic/museum professional and at the RCN's Medical Marketplace. Also includes four respondents from the teachers focus group session held at RCN. Using the marketplace as an informal setting, participants 'dropped in' on the play-testing and were given limited instruction. The duration of the play-testing per game was determined by the player.

Session Outcomes

Key analysis themes:

1. Members of the general public tended to pick the game up quicker and were more successful in getting the correct answers. This appeared to be because they tended to go with their 'gut' or first thought rather than discuss and debate the answers.
2. Players indicated that the differing amounts of cards per theme was confusing and that each theme should be colour coded clearly to help with separating the cards.
3. It was observed that almost all of the players didn't spend time reading the instructions on the page and as a result played the game varying ways; such as, shuffling the themes and playing random cards.
4. The answer booklet proved cumbersome and difficult to engage with, particularly when players used 'shuffle' game-play as finding the answers across the pages was time consuming and confusing. Most players indicated that the cards and corresponding answers should be numbered.
5. Decisions on which theme to play were often based on the first statement they could see. 'Women have smaller brains' was seen as an off-putting statement by some of the male players so they avoided that theme.
6. Many players brought a lot of prior knowledge to the game to help them work out the answers.
7. Some people tried to work out the answers by using a proportional approach – eg: if they'd already had a certain number of 'current' or 'false' statements the next one must be 'disproved'.
8. It was felt by many of the players that once played there would be little incentive to play the game again due to the limited number of cards.
9. In the market-place environment, all the players chose to work as team rather than compete with each other and therefore, felt no need to keep score, however in smaller play-testing groups such as the teachers group, players competed in teams and felt there was a need to use a score card.
10. Almost all the players observed struggled with the format of the 'board' and appeared to be frustrated with the size in comparison to the cards.

11. Players were observed and heard discussing their confusions over the differentiation between Disproved Theory and Fictional, indicating that the two terms felt interchangeable or too similar to be able to choose between the two.
12. The game was generally well received, with 85% of players indicating that the game did appeal to them.
13. The top three words selected to describe the game by players was educational, entertaining and engaging, and this was reflected in the observations.
14. As expected, players were more expressive and provided more in-depth critiques when observed or in discussions with the play-testers, over the questionnaire.

Play-testing Questionnaire Analysis –

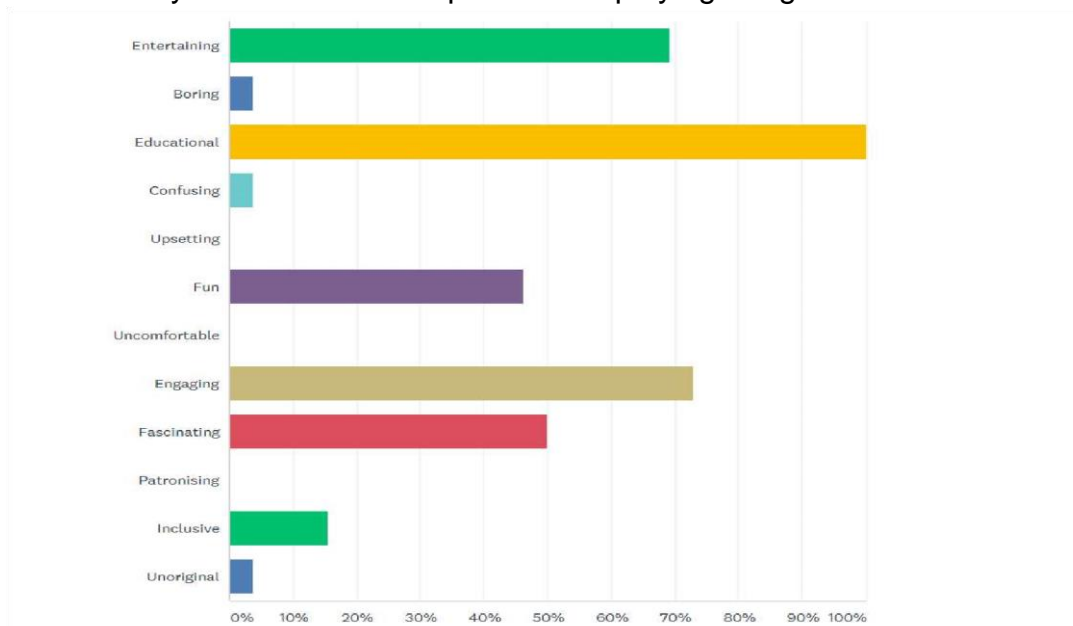
1. How easy was it to understand the game's instructions? (Total 27)

Very Hard	Hard	Average	Easy	Very Easy
0	1	2	18	6

2. How easy did you find the questions? (Total 27)

Very Hard	Hard	Average	Easy	Very Easy
0	2	21	4	0

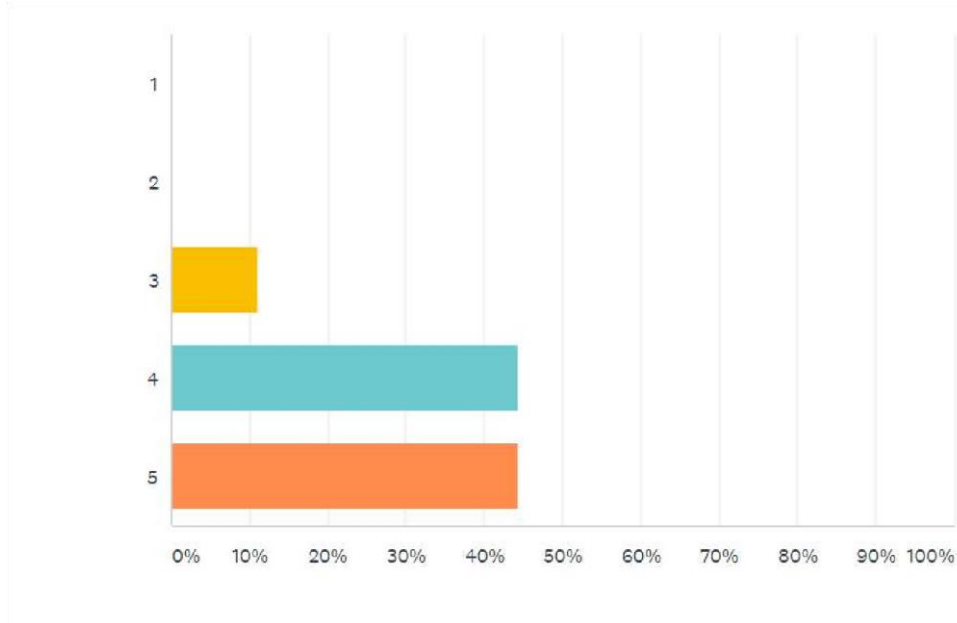
3. How would you describe the experience of playing the game?



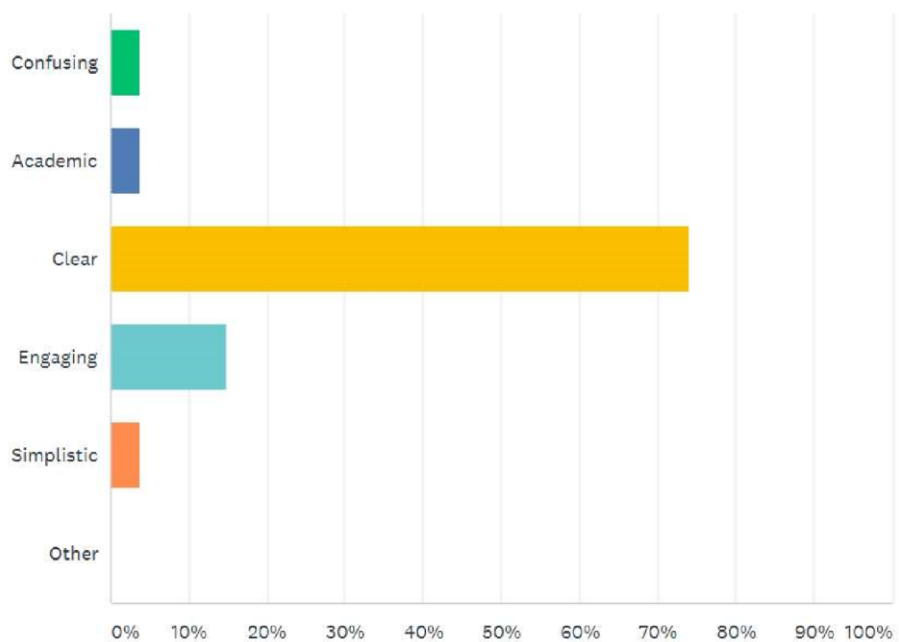
4. Are there any other themes or topics you would like to see used that were not included in the game?

Could go further back - medieval, Roman, greek medicine
Psychology - more than physiology of mind/brain
Medical equipment
Surgery and historical
Politics
How medicines have changed across the years.

5. On a scale of 1 – 5, how well did you understand the themes of the game?



6. How would you describe the language used in the game?



7. What did you like most about the game?

Learning interesting new facts (esp answer booklet). Humorous statements.
 Leads to debate - actually interested in questions.
 Fascinating facts and interesting context sheets.
 Fascinating facts and chance to draw on a range of knowledge and experience.
 Quick and inclusive.
 It's not something to think about, it's your first thought that counts.
 It was about medicine and history.
 The questions.
 The fact that they didn't just use well known facts/misconceptions so you actually have to think about it.
 I liked how you learnt lots of facts.
 The fact that there were so many weird facts.
 Didn't require massive set up.
 The 'reveal'.
 Fun, inclusive and informative.
 Interesting questions.
 The questions.
 Potential for group discussion.
 You learnt more about the topics, so educational.
 Found it interesting.
 Challenge my thinking and knowledge.
 Very interesting.
 Interactions with others.
 Discussion and engaging topics.
 Learning things I didn't know before.
 Worked as a group.

8. What didn't you like about the game?

Very niche. Not a huge amount of cards, so not many hours of gameplay
 More focus on outcome
 There aren't that many facts. Could you really play it more than once? No competitive elements.
 Once completed a section - no incentive to play again. Ambiguity in phrasing/concepts.
 Outcome not clear
 Some statements need rephrasing as unclear. Cards needs regular updating. Wasn't very engaging as a game.
 Could be a bit too simplistic. Perhaps develop a bit more to be more kinaesthetic. The columns were too small so you couldn't fit all the cards on
 Sometimes it is quite hard to get them correct.

Unless there were hundreds of questions it would be boring very quickly
The categories could have been slightly broader.

Nothing.

Getting it wrong!

I liked it all

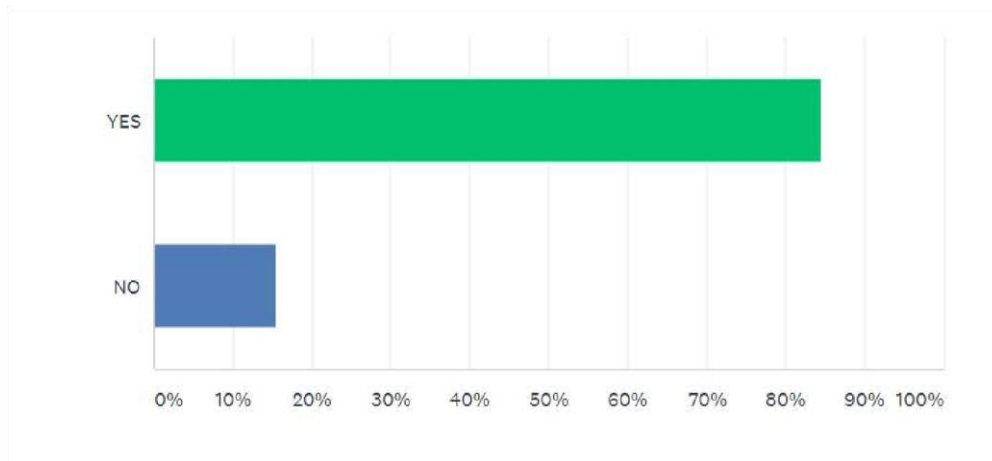
Themes not entirely correct in relation to some questions.

Perhaps too long.

Difficult distinction between Disproved and
Fictional. Nothing really Nothing.

No real board to play on with pieces for each player.
Some silly questions.

9. Would this game appeal to you? Y / N



10. Any other comments?

NURSES - "Difficult to work out whether a statement is fictional or has been disproved. Maybe good to use as an ice breaker on the start of a new topic in teaching a specific subject."

ACADEMIC/MUSEUM PROFESSIONAL - "Could work very well as a group activity for 16+.

Quite difficult and some questions difficult to understand. Perhaps not for general public. Could make [the game] as an app."

"There are some words people are unlikely to understand."

"What is the definition of 'current'? Is the rhino horn used to test for poison today?"

GENERAL PUBLIC

"Good concept. Could have added packs like Cards Against humanity."

“Great game!”

“Hope it goes ahead.”

“Short sentence explanations of why some treatments were disproved [would be useful].”

“It was fascinating and interesting.”

TEACHERS

“Might appeal to GCSE history students if it was linked to History of medicine specifications.”

“As a teacher I would have to plan how to use the game, how to feedback, research and use as a teaching tool.”

“I would use this as a teacher with careful planning for usage only.”

“Target audience? Use with a class would require a lot of planning and differentiation but for personal use its fascinating.”

“The more developed game is much clearer but the language style depends on the cards you get, but still individual words are ‘tricky’ for teenagers: ‘trait’, ‘proportion’.”

“The digital version was only in presentation form [from the designer], so couldn’t see the quiz to compare.”

Considerations

Below are key details picked out from discussions with players and observations.

Content

- Several players didn't understand what a 'free-standing midwifery unit' was – thought 'freestanding' referred to the woman's position i.e. giving birth standing upright.
- Several players expressed that they weren't sure on the definition of 'midwife'.
- Regular debate and questioning of some of the Fictional answers such as the foetus movements being called 'knockers'.
- The limited number of cards.
- The Society and Mind themes proved to produce the most discussion and debate.
- The statement regarding parents visiting children in hospital needs to be clearer.
- Statement about giving birth in a free-standing midwifery unit caused concern and provoked memories of very personal and emotional experiences – life or death situations. If this care is used it needs to be clear that this is only in straight-forward pregnancies.
- The statement about the foetus being a parasite and the removal of ovaries, provoked emotional responses from several players.
- The teachers group picked out a selection of words that they felt were too difficult/complex for their students: 'trait', 'proportion', 'excess', 'free-standing midwifery unit'.
- The teachers group were keen on introducing more of a 'Horrible History' theme and felt it needed to be more gruesome to capture students' attention.

Format

- The majority of players observed indicated either to the play-testers or their groups that they wanted immediate answers and found the answer booklet 'clunky' or 'tiresome'.

- The teachers group discussed using QR codes for answers, but the response was no to this as neither students or teachers are allowed phones in class.
- The teachers group indicated that Google Classroom is popular in schools and they do use iPads, so this could be a possible way to connect with the digital version of the game.
- Several respondents, including the teachers groups, suggested the game could link to textbooks and library books, as school students rarely use books in class any more.
- The teachers group encouraged the idea and expressed a need for the game to come with lesson plans otherwise they would find little time to be able to plan the game into the lesson and therefore would be unlikely to use the game.
- The teachers group suggested that the game could be adapted and used differently for different subjects and should focus on including a kinaesthetic approach to game-play.
- The academic/museum professional suggested thinking about formats that would allow a more quick fire, competitive game play.
- The academic/museum professional also suggested introducing a die to pick themes to introduce a more random game-play element.

Design

- Comments on the aesthetic of the cards focused on the colour coding; indicating that the themes should be easily differentiated i.e. making the back of the cards (as with one deck used on the day) should be the colour of the theme.
- Some comments focused on insuring the colours used for the colour coding should be clearly different i.e. not using a tone of dark orange too close to red.
- One respondent felt the design gave the game an 'historic' feel.
- Several respondents indicated that the game should come with a board that fits the cards and could include a 'start' and 'finish' point where cards and themes can then be picked as in Trivial Pursuit.

Project: Mind Boggling Medical History

Date: 29 November 2017

Session: Play-testing

Respondents: 14

Session Structure

Play-testing held at the Science Museum as part of one of their 'Teachers' Lates'. There were many teachers in attendance, but their focus was on socialising and enjoying the exhibition. It was difficult to attract people to sit and play the game as it was seen as being too much like work.

Session Outcomes

Key analysis themes:

1. The majority of players were really enthusiastic about the game, but on deeper discussion they liked the format and would copy this to write their own version that was relevant to their subject.
2. Many suggested using the format as a 'starter'. This is an introduction to a new topic.
3. No one followed the recommended timed element of the game.
4. Most groups worked together and did not play the game competitively.
5. Interestingly those from a science or medicine background seem to get more wrong than others (noted with academic groups too).
6. People struggled with the answer booklet and found it awkward, but they enjoyed reading some of the detail.
7. There continues to be a confusion between 'disproved' and 'fictional'.
8. Some played one round, enjoyed it but didn't want to play any more. Others stayed for long periods of time.

Play-testing Questionnaire Analysis –

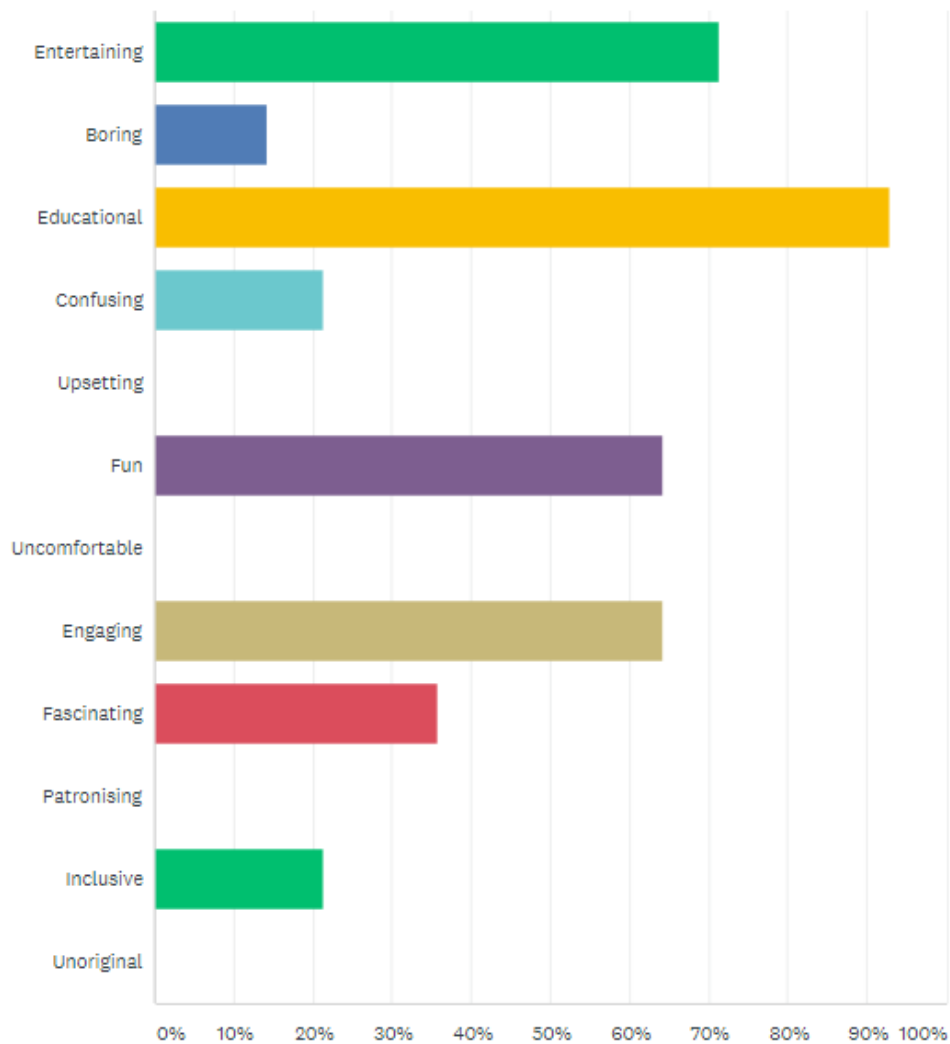
1. How easy was it to understand the game's instructions? (Total 14)

Very Hard	Hard	Average	Easy	Very Easy
0	0	1	11	2

2. How easy did you find the questions? (Total 13)

Very Hard	Hard	Average	Easy	Very Easy
0	8	2	2	1

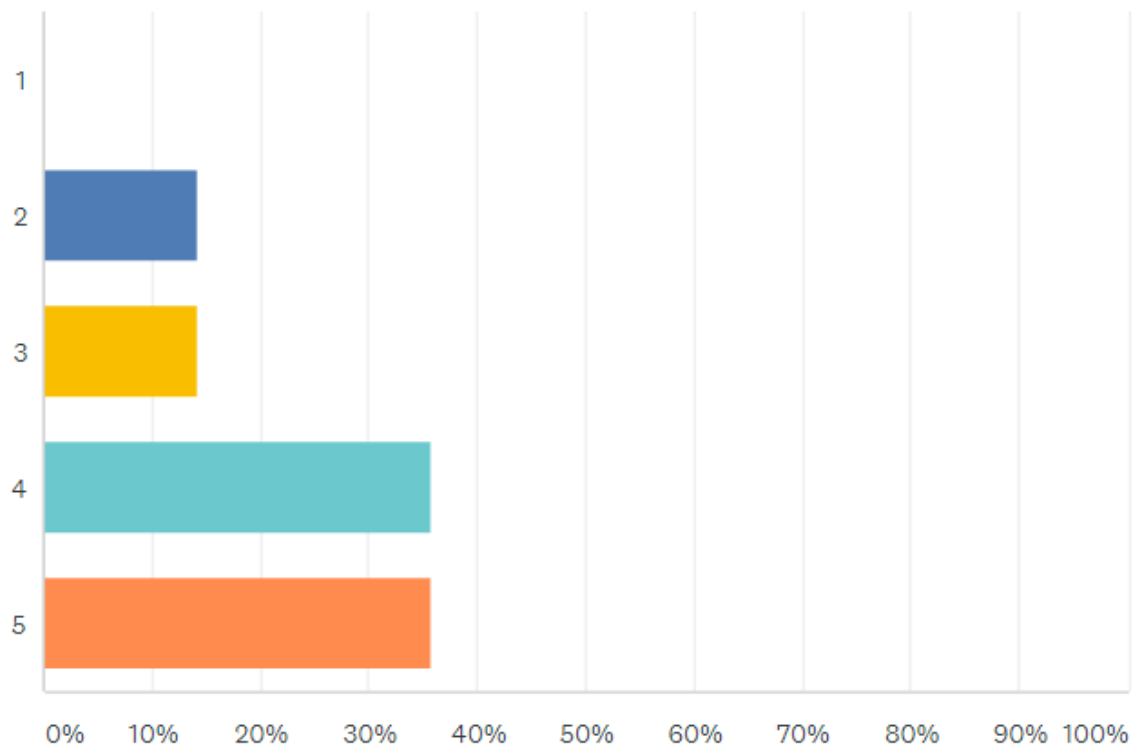
3. How would you describe the experience of paying the game?



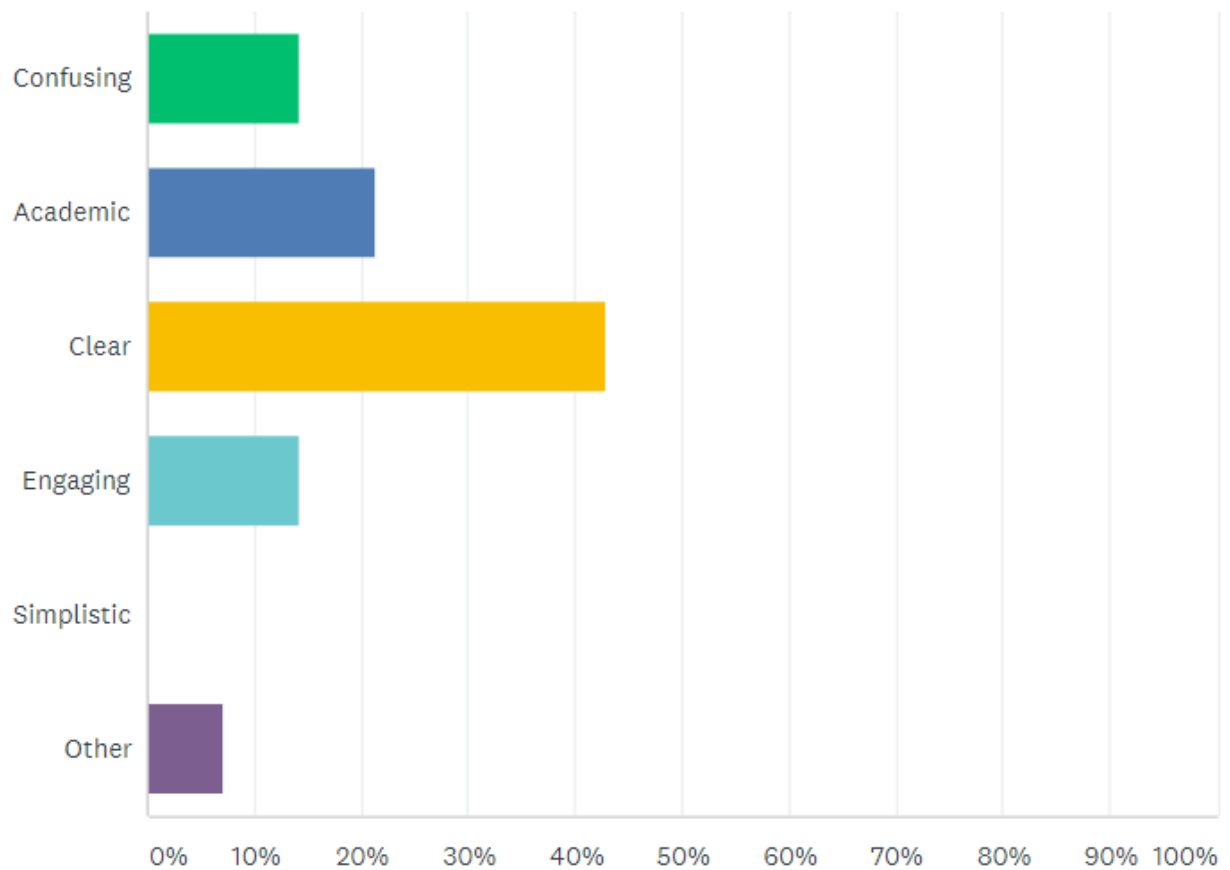
4. Are there any other themes or topics you would like to see used that were not included in the game?

Children? World?
Historical facts – WW1/WW2
Space
Medical procedures
Topics linked to the Primary Curriculum
None
Maybe non-medical topics but still history of Science?
Inventions? Technology advancements?

5. On a scale of 1 – 5, how well did you understand the themes of the game?



6. How would you describe the language used in the game?



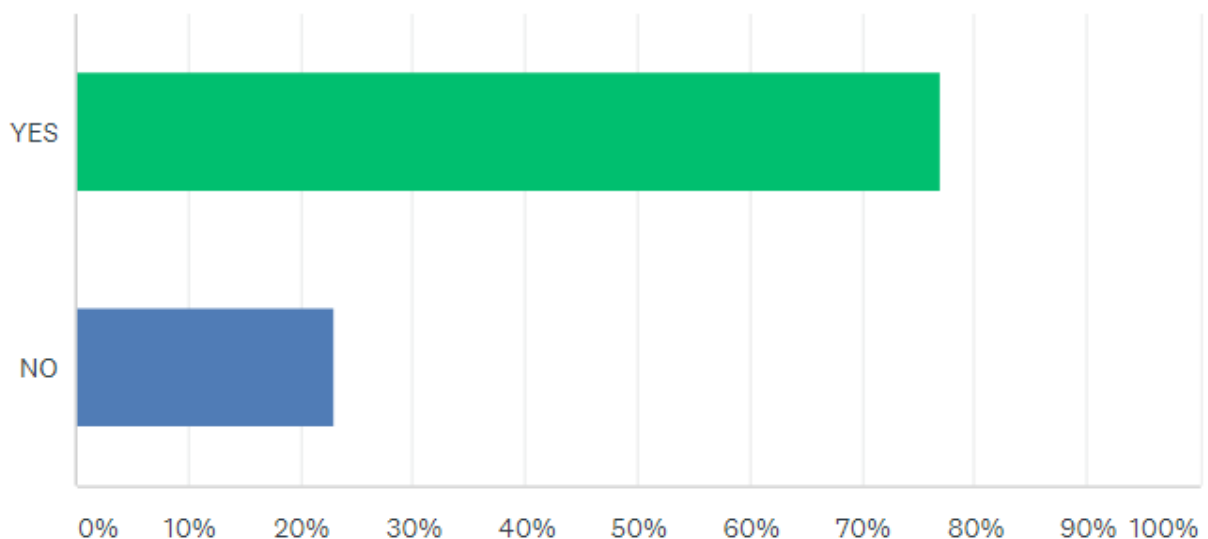
7. What did you like most about the game?

Fun and easy to play
Educational – great to learn the historical explanations of ‘disproved’
Learning new facts
Finding out true stuff, but we thought it was historical!
Questions – challenges
Competitive element and opened discussion
I learnt something
The surprise of finding out things that are true
If I had got most correct
Finding out new facts
The topics were engaging and led to good conversation
Fun facts!
Easy to understand

8. What didn't you like about the game?

Not sure about conclusion/replayability
Didn't understand the aim. Difficult to distinguish between disproved and fictional labels
I would like a scoring system
Looking up the answers in the sheets was tedious. Why not give the answers in the format that the participants used to answer the questions
The vagueness of the language
Not knowing the answer
More images

9. Would this game appeal to you? Y / N



10. Any other comments

“Instructions looked ‘boring and long’ so couldn’t ‘be bothered to read them’ before playing”

“Confused about the categories. They felt it should be ‘true’, ‘false’ and ‘historically true’”

“Not really a game as once you know it...”

“Great!”

“The game needs to be streamlined. Additionally it is a test of knowledge and not effective at educating people in my view.”

“Online version would be great!”

“Would be great as an online printable resource for national curriculum topics.”

“This isn’t a fun game though”

“It’s made by Oxford – they wouldn’t make it obvious.”

Considerations

Below are key details picked out from discussions with players and observations.

Content

- Rhino card led to discussion. Seems unlikely this is ‘current practice’.
- Dolly the Sheep question ‘not really medical theory’.

Format

- The difference between ‘disproved’ and ‘fictional’ is not clear. Most participants refer to ‘true’ and ‘false’ instead.
- The answer booklet is difficult and would benefit from being clearer.
- The game is rarely played competitively, leading to one person commenting ‘this isn’t really a game’. It was felt people would not retain any of the information, therefore, they couldn’t see in what educational context it would be used.
- People find it hard to see how the game can be played more than once.
- Some commented on the different number of cards in each theme.
- Good for encouraging discussion and debate.

Design

- Although rarely played competitively, some participants requested a scoring system.
- Would be useful if whole card was the colour of the theme.
- There were not many specific comments on the design, suggesting it didn’t stand out.