

National Science Quiz 2022 report

Overview

This is Part 1 of two reports that make up the final report of the 2022 National Science Quiz (NSQ). Part 1 reports on the NSQ up until the live and streamed event on 7 August 2022. Part 2 will report on the outcomes of the resources produced from the quiz event for teachers and students, including the careers page.

The 2022 Quiz was a live and live streamed event. The live event was held at Federation Square in Melbourne on Sunday 7 August. The live streaming was done via the NSQ YouTube channel.

Charlie Pickering from ABC-TV's *The Weekly* hosted the Quiz that consisted of two teams competing against each other by answering science-based quiz questions. Each team contained two Australian scientists and a special guest team captain.

More than 200 people attended the live and show and there were 549 registrations for the online event. About 1000 people viewed the event online on the night via the NSQ YouTube channel.

This year the event was not awarded a National Science Week grant, but secured funding through partners and sponsors. Partners contributed a minimum of \$5000 and contributed member(s) to the NSQ Steering Committee. Sponsors contributed up to \$2000. They did not have a role on the Steering Committee.

Background

The Australian Research Council Centre of Excellence for Mathematical and Statistical Frontiers (ACEMS) was the driving force behind the creation of the National Science Quiz in Australia in 2016. It was inspired by De Nationale Wetenschapsquiz (NWQ), which was televised nationally in The Netherlands for 25 years by VPRO, an independent public broadcasting company. The NWQ aimed to demonstrate the process of scientific reasoning in an accessible, engaging and authentic way.

Previous to 2022, there has been three live shows and an online version of the National Science Quiz, each with Charlie Pickering as host.

2022 Highlights

Attendance

Live at Fed. Square: 205

Online at home: 579 Event registrations

SLIDO quiz participants on the night: 448*

YouTube views

Watching live (7 August) = 1000 (approx.)

To date (2 November 2022) = 1800

82% of exit survey respondents (N=176) said the quiz was a great way or pretty good way to engage people with science.

Exit survey respondents found the panelists intelligent, entertaining, personable/likeable and diverse

Most participants found the quiz questions acceptable. They valued the structure and degree of difficulty of the questions and described the questions using terms such as fair, balanced, interesting, thought-provoking and challenging.

The large majority of the survey comments about their overall experience of the Quiz were positive with the most common words/phrases used to describe their experience being, good, fun, great, engaging, entertaining and family fun.

Target audience

NSQ has two key target audiences:

- The general public
- Secondary students and teachers

NSQ objectives

Driven by the collection of ARC Centres of Excellence, the NSQ aims to be a national 'recorded' event for the general public to promote interest in the sciences in Australia.

Specific objectives are the following:

- To engage the target audiences with science in a fun and entertaining way
- Through the post-event resources, to further engage secondary students and teachers with science and expose them to a greater breadth and depth of the opportunities in STEM.

Sponsorship

FLEET, as convener, sought two forms of sponsorship: partner level and sponsor level. Alongside FLEET, the NSQ partners were the ARC Centre of Excellence for Plant Success (Plant Success); ARC Centre of Excellence for Engineered Quantum Systems (EQUUS); ARC Centre of Excellence for Gravitational Wave Discovery (OzGrav); ARC Centre of Excellence in Exciton Science (Exciton); MATRIX Mathematics Research Institute; and Defence Australia Science and Technology (DST). The NSQ had one sponsor, *Monash Engineering.

The details for each sponsor level are provided below.

Benefits offered for \$5,000 contribution – Partner Level

- Logo included on electronic and print media such as:
 - Acknowledgement as partner included in all digital media promotion including National Science Week channels
 - Your logo on the NSQ homepage with direct link to partner website
 - Acknowledgement in all media releases and campaigns
 - Acknowledgement in promotion via FLEET e-newsletter (international audience) with direct link to partner website
 - Access to promote event on Partner Centre communication channels

- Banner placement at live event
- Acknowledgement in the Partner section of the streamed video during National Science Week
- Acknowledgement in teacher resource packages promoted to schools. Partners will also have access to use the experiment videos/student resources for their own outreach activities
- Six VIP passes to attend the live recording
- Membership of the Steering Committee
- Option to nominate a panellist for the quiz
- Option to lead the NSQ in future years

Benefits offered for \$2,000 contribution – Sponsor Level

- Logo included on electronic and print media such as:
 - Acknowledgement as partner included in all digital media promotion including National Science Week channels
 - Your logo on the NSQ homepage with direct link to partner website
 - Acknowledgement in all media releases and campaigns
 - Acknowledgement in promotion via FLEET e-newsletter (international audience) with direct link to partner website
 - Access to promote event on Partner Centre communication channels
 - Acknowledgement in the Partner section of the streamed video during National Science Week

*Monash Engineering came on a sponsor to help fund the careers part of the NSQ website and are acknowledged appropriately in this section of the website.

Organization of the National Science Quiz

The NSQ was coordinated by a Steering Committee and an Operational Committee that operated as a sub-committee of the Steering Committee. The Steering committee consisted of at least one member of each partner organization.

Steering Committee

The role of the steering committee was as follows:

- Assist with resolving strategic level issues and risks
- Approve or reject changes to the Quiz with a high impact on timelines and budgets
- Assess event-planning and progress and report on the event to relevant stakeholders
- Provide advice and guidance on business issues facing the event
- Use influence and authority to assist the event in achieving its outcomes
- Review the success of each event and advise changes for future events
- Nominate and finalise selection of panellists
- Advise on potential content and approve final content (eg. questions/experiments)
- Promote event
- Seek sponsorships
- Be an advocate/champion of the event at CoE, host universities and beyond

Jason Major (FLEET) was nominated chair of the Steering Committee. Other committee members are listed below:

- Emma Horswill (Plant Success)

- Eloise Foo (Plant Success)
- Tom Keegan (MATRIX)
- Jackie Bondell (Ozgrav)
- Lachlan Rogers (EQUUS)
- Hilary Schubert-Jones (Defence Science)
- Luke Hamlin (Defence Science)
- Josh Ezackial (Exciton)
- Wallace Wong (Exciton)
- Chris Vale (FLEET)

The Steering Committee met initially every 2-3 weeks then every week from 2022.

Operational Committee

The role of the Operational Committee was to assist the Steering Committee in implementing decisions. This year the outreach committee only had one person, Joshua Gray (FLEET). Josh took on the role of learning how to operate and test the SLIDO platform. Josh also ran SLIDO for the online (at home) audience during the event.

There were various volunteers from FLEET and Plant Success that helped with the bump in and out and different support roles on the day of the event. Two important roles were those of the “lab assistants” that were performed by Josh Ezackial (Exciton) and Caitlin Dudley (Plant Success). Their role on the night was to perform experiments that supported the science in some of the questions and to deliver score checks.

Event

Panellists and host

The National Science Quiz involved two teams and a host. The host was TV personality, Charlie Pickering. Each team consisted of two scientist and a team captain. The scientists were Jacqui Romero (EQUUS), Brad Moggridge (University of Canberra), Barbara Holland (Plant Success) and Kirsten Banks (University of NSW). The team captains were comedian and science communicator, Lawrence Leung, and ABC weather presenter and science communicator, Nate Byrne.

Quiz format

There were three types of question formats for the event: Multiple choice with 45 seconds for panellist to consider the answer; a more rapid True/False round with 5-8 seconds of time to consider the answer; and two “What am I-style” questions that were multiple choice but panellists could answer at any time as the clues were read out.

Charlie Pickering read the quiz questions to the teams. During the 45 second multiple choice questions. each team revealed their answer and the idea was for there to be a short discussion, facilitated by Charlie Pickering to demonstrate the process of scientific reasoning in an accessible, engaging and authentic way. This unfortunately did not occur as much as it should have, despite being written on Charlie’s cue cards, and it is something to be mindful of for 2023.

The two audiences (live and at home) could also play the quiz through the online platform, *SLIDO. The audiences competed for cash prizes: The Fed Square audience winner won \$500; the winner of the online audience at home won \$250. Both cash prizes were in the form of a gift card that could be used at multiple retail outlets.

There was also an opportunity for the public to submit a video or written quiz question. The question judged the best was used in the quiz and received a \$200 gift card.

*SLIDO is an online audience interaction platform that enables you to run quizzes, Q&A, polls and meetings.

Budget

The 2022 budget spreadsheet is presented below in Figure 1. The 2022 budget has two expense columns. The actual cost is the total cost to run the event. It includes the extra costs covered by partners such as printing, trophies and panelist makeup. The Monash Outgoing column is what came through the Monash University accounts and is what is used to compare against the income column. Note that the fee for the venue hire of the Edge Theatre (Fed Square) is not included in the 2022 budget because the fee was paid from the 2021 budget, but carried over to 2022. This occurred because the 2021 live event was cancelled because of COVID.

An unexpected withdrawal by one sponsor means the budget is in deficit of \$1565.92.

	Forecast 2022	Actual 2022	Monash Outgoing		Income	Profit/Loss
	inc. GST	Incl GST	Incl GST		incl. GST	
STAGING				Sponsors		
Panelist desk (set) incl paint and corflute printing	\$ 2,200.00	\$ 2,441.58	\$ 2,263.55	FLEET	\$ 15,000.00	
Fed Square AV, lighting, technician, cameramen, hire equipment (incl advertising poster - \$505)	\$ 22,422.40	\$ 22,422.40	\$ 22,422.40	Plant Success	\$ 11,000.00	
James Rafferty Pre & post production	\$ 6,100.00	\$ 6,050.00	\$ 6,050.00	EXCITON	\$ 5,500.00	
Venue Hire (Matrix)	\$ -	\$ -	\$ -	Dept Defence	\$ 5,500.00	
ADMINISTRATION				EQUUS	\$ 5,500.00	
Website page production (inc careers page), updating	\$2,200	\$2,200	\$ 4,114.00	OzGrav	\$ 5,500.00	
Panelist Travel/Accommodation	\$ -	\$ -	\$ -	Monash Eng	\$ 2,200.00	
Trophies (Plant Success)	\$ 200.00	\$ 498.68	\$ -	Matrix	\$ -	
Live event materials, incl run sheet, science demo material (Exciton, Matrix)	\$ 300.00	\$ 567.95	\$ -	Ticket income	\$ 1,702.00	
Postage	\$ -	\$ -	\$ -			
Courier fees	\$ -	\$ -	\$ -			
Audience prizes gst??	\$ 950.00	\$ 950.00	\$ 950.00			
TALENT/PANELLISTS						
Host: Charlie Pickering	\$ 12,400.00	\$ 12,430.00	\$ 12,430.00			
2 CoE scientists (travel/accommodation/meals/expenses)	\$ 1,600.00	\$ 1,615.07	\$ -			
2 Non-CoE scientists (travel/accommodation/meals/expenses)	\$ 1,400.00	\$ 1,531.00	\$ -			
Nate Byrne (no gst)	\$1,100	\$ 1,100.00	\$1,100			
Lawrence Leung	\$ 1,100.00	\$ 1,100.00	\$1,100			
Catering - panellists, host, volunteers	\$680	\$ 678.90	\$ 630.29			
Make-up artist \$500 (Plant Success)	\$ -	\$ 500.00	\$ -			
Panelist gifts	\$ -	\$ 76.45	\$ 69.95			
PROMOTION						
Paid advertising (Social media only) (no gst)	\$ 1,440.00	\$ 1,437.73	\$ 1,437.73			
Host question/Q cards, associated printing (Plant Success)	\$500	\$ 357.50	\$ -			
Q cards/programs/posters/banners	\$ -	\$ -	\$ -			
COMPETITION APP						
Slido subscription (no gst)	\$ 900.00	\$ 900.00	\$ 900.00			
TOTAL	\$ 55,492.40	\$ 56,857.26	\$ 53,467.92	Total	\$ 51,902.00	-\$ 1,565.92

Figure 1. National Science Quiz budget for 2022

Promotion/Marketing

Marketing for the live and online quiz was pursued via a social media campaign and extensive direct marketing through email and phone calls, a listing on the *What's on in*

Melbourne website and the National Science Week website, and marketing through Fed. Square's social and direct mail options. See below for details. We asked in the evaluation survey through which medium respondents found out about the NSQ. The most popular way was via a friend, the National Science Week and National Science Quiz website, Facebook and Twitter. See Figure 2 below for details. There were 15 responses to this question from the at home audience that identified themselves as secondary students. With the exception of one, about half found of the secondary student audience learned about the event through a friend, the other half through either the National Science Week or National Science Quiz websites.

The largest proportion of marketing budget was used in paid advertising through Facebook, Instagram and TikTok (\$1437.73). A poster was also put up in Fed. Square at a cost of \$505

The detailed NSQ campaign targets are outlined below.

Social media

- Paid advertising was conducted through Facebook, Instagram and TikTok. For example, we used teaser questions that included getting the panelists and hosts to do a short video reading out a selected teaser question.
- Use of panelist/host social networks to promote and share NSQ marketing
- Use of steering committee member and Centre of Excellence social media networks

Direct mail/contact

The NSQ Steering committee had access to a large database of about 350 secondary schools and teachers across Australia. The Steering committee conducted a direct email campaign to these schools and teachers to promote participation in the quiz. Invitations were also sent via direct email to relevant university student associations across Australia and to university residential colleges in Melbourne.

Invitations were sent to Melbourne-based Members of Parliament, local councillors and scientists to attend as VIPs.

The following organizations were contacted directly via email and/or phone to ask if they would be happy to promote the Quiz through their social and other networks. All agreed to do so:

- Education-based organizations such as Monash Tech, RiAus and Gene Technology Access Centre
- State and national science teacher associations, and the Australian Science Communicators
- Partner university media offices, associated Research Training Hubs

Fed. Square

As part of the venue hire agreement, Fed. Square grant access to some of their marketing options. The NSQ committee used those that were free, which included a week-long social media campaign and direct mail notification to subscribers of Fed. Square news.

Partners

Advertising and promotion occurred through NSQ partner newsletters, websites and social media.

Media release

A media release was sent to science writers and relevant journalists at The Australian, The Age and Sydney Morning Herald, Campus Morning Mail, ABC, The Guardian, The Conversation, Canberra Times, SBS, NITV

NSQ talent were interviewed on two radio shows: ABC Hobart, and the Matt Preston Show on ABC radio Melbourne. Nate Byrne promoted the event during his segment on ABC Breakfast TV.

Discount tix

A discount ticket campaign was targeted at relevant Melbourne-based university clubs and societies and 25 of Melbourne's top secondary schools. The schools, clubs/societies were contacted directly through email and/or phone to offer them \$5 tickets to the live show. They were given a discount code they could use that was specific to their school or organization. The schools were offered a certain number of free tickets using school specific discount codes.

What's on in Melbourne

A free listing was placed on the What's on in Melbourne website

National Science Week

A listing was placed on the National Science Week event page

National Science Quiz website

There was an existing NSQ website from 2021 that we built on for 2022. We also added the following NSQ-dedicated social media accounts: Facebook, Twitter, Instagram, TikTok and YouTube.

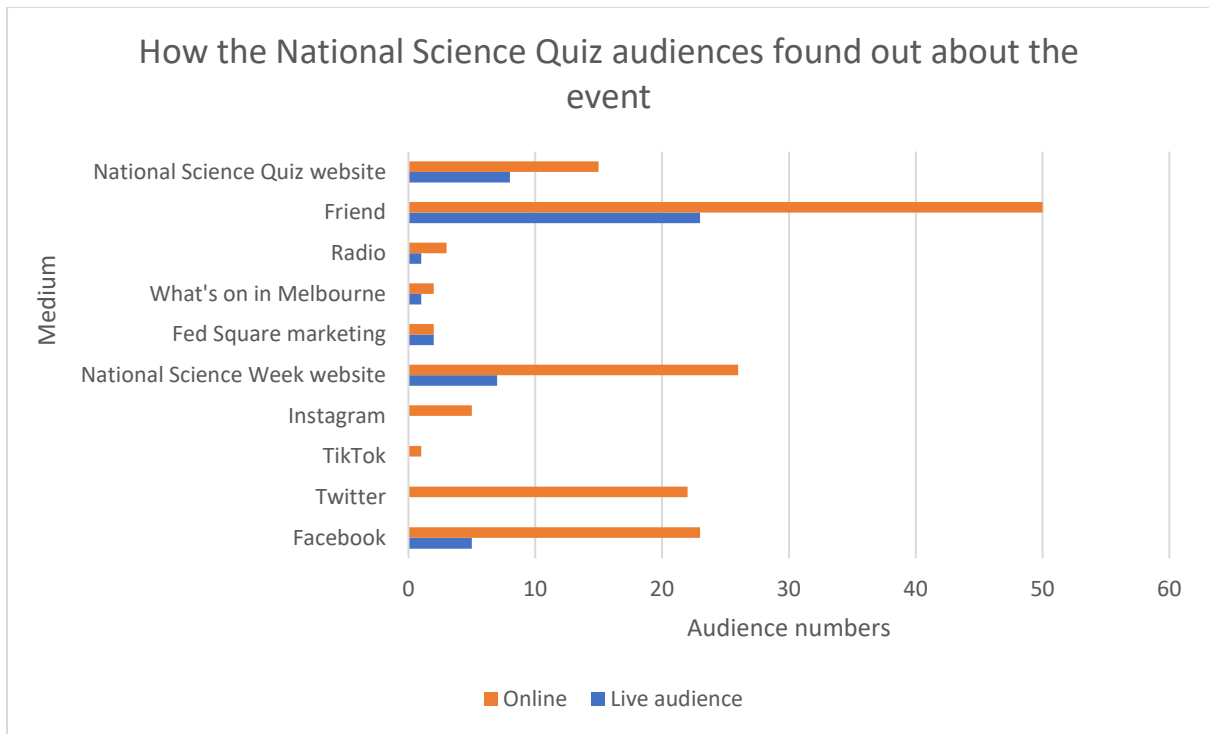


Figure 2. Where members of the public attending the live show at Fed. Square or playing the quiz online found out about NSQ 2022.

Evaluation

Attendance

Live at Fed. Square: 205

Online at home: 579 Event registrations

SLIDO quiz participants on the night: 448*

YouTube views

Watching live (7 August) = 1000 (approx.)

To date (2 November 2022) = 1800

*The figure of 448 represents the number of individuals that logged onto SLIDO to play the quiz, not total number of participants. A lot of people participated in teams or as a family, which makes the actual number of participants hard to estimate, though it is higher than the number that registered.

Exist survey

A survey to evaluate the impact of the quiz relative to our objectives was conducted through SLIDO for the live and at home audiences.

Number of respondents to survey

Fed Square live audience = 40

Online at home audience = 136

The survey asked the following questions:

1. What is your age (years)?
2. Select your most appropriate occupation
 - Secondary student

- Tertiary student
 - Full or part-time employment
 - Retired
 - Other
3. Use single words or short sentences to describe your thoughts on the following
 - Panellists
 - What you learned about the scientists on the panel
 - The Quiz questions
 - Overall experience of the event
 4. How would you rank the National Science Quiz as a fun way to engage with science? (5 rankings, plus unsure as an option)
 5. Select from the list the ways you found out about the National Science Quiz (they can select more than one)
 - Facebook
 - Twitter
 - Tik Tok
 - Instagram
 - National Science Week Website
 - Fed Square marketing
 - What's on in Melbourne
 - Friend
 - Radio

The survey responses are analyzed in more detail below.

Survey analysis

Age

The average age of the survey respondents was 37 for the live Fed Square audience and 33 for the online at home audience. Note, a small number of respondents did not answer this question.

When the ages were grouped into ranges, the predominant age range for the online audience at home was 36-45. The age range for the Fed Square audience was much more evenly distributed. See Figures 3 and 4 below.

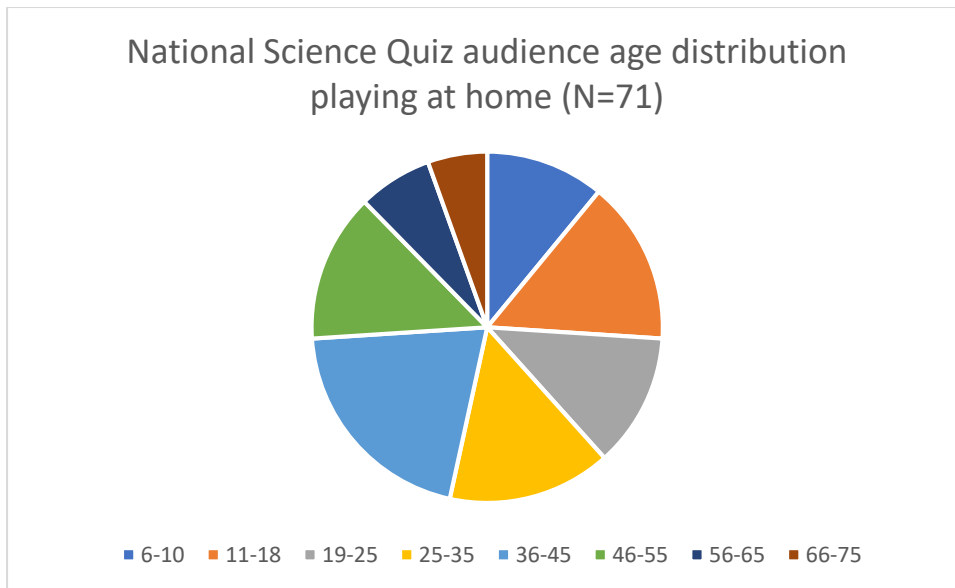


Figure 3. Age range of online at home audience survey respondents

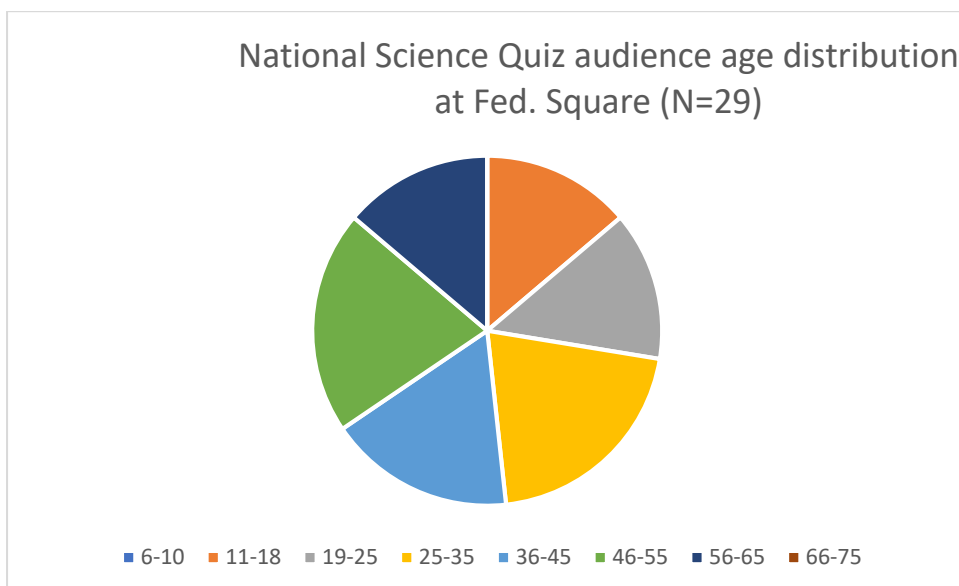


Figure 4. Age range of NSQ Fed Square audience survey respondents

Occupation

Most participants in the quiz – at home and live at Fed Square were employed adults. Tertiary students made up the next highest proportion of participants. There were just under 20 secondary students from the at home participants who completed the survey and zero from the live audience at Fed Square. See Figure 5. below. We do know, however, from recording tickets names at the door on the night of the show that there were at least four secondary students in the live audience.

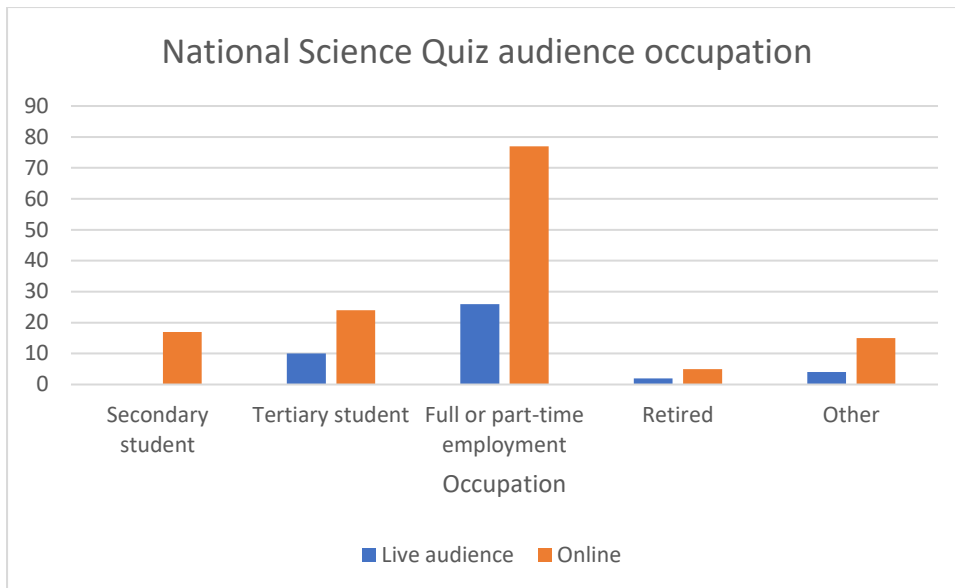


Figure 5. Occupations of the survey respondents

Question 3. Use single words or short sentences to describe your thoughts on the following:

- Panellists
- What you learned about the scientists on the panel
- The Quiz questions
- Overall experience of the event

The live and online audience responses are combined for each part of Question 3 because there was no discernible difference in the responses. That is, none of the responses were specific to a single audience. This includes the 17 responses from secondary students in the at home audience. That is, the secondary student responses for each part of Question 3 reflect the responses from combined audiences.

Word clouds were generated for each part of question 3 to reflect the survey respondents' thoughts. The exception was for the second part describing respondent thoughts on what they learned about the scientists because the data for this part was indeterminate. The responses to each part of question 3 are analyzed in greater detail below.

Panellists

The survey respondents' thoughts on the panellists came under the following five broad themes:

Intelligence

Included words such as, smart, knowledgeable, professional, innovative, clever dicks, and unimaginably talented

Entertaining

Included words such as, funny, energetic, fun, entertaining, interactive, amusing, witty, exciting, humorous, too much talk & "comedy"

Personable/likeable

Included words such as, good-natured, outgoing, role models, interesting, committed, enthusiastic, accessible, inspiring

Diverse

Included words such as, diverse mix, good to have diversity, equitable, good mix, representative, good but no female captain

General

Included words such as, really good, good, great, well-chosen, boring, bland, fantastic, brilliant, mint, epic

The overwhelming majority of responses were positive. Two responses referred to the need to have a female captain. The few negative responses included those such as boring, bland and a perception that there was, "Too much talk & comedy"

See Figure 6 below that combines the responses in a word cloud.



Figure 6. Words used by survey respondents to describe their thoughts on the NSQ panellists

What you learned about the scientists on the panel

In hindsight this was an ineffective question because most of the responses were too limited to reveal anything useful. One theme to emerge that supports dropping this question in future surveys was that 14 responses suggested they learned nothing about the panellists, which is an understandable response given the event did not allow for the audience to learn much about the panellists as people.

Question 5. How would you rank the National Science Quiz as a fun way to engage with science?

Overall the survey respondents considered the Quiz a great way to engage people with science with *179 out of the 219 respondents (82%) to this question saying the quiz was a great way or pretty good way to engage people with science. See Figure 9 below. Secondary students from the at home audience reflected this ranking though none of the secondary students ranked the quiz below OK. See Figure 10.

*Note the figure of 219 respondents does not align with the 176 total recorded respondents to the survey (live and at home audience combined). We are using the analytics system provided by SLIDO and the figures it provides in its breakdown of responses to individual questions. It is possible that survey respondents could enter more than one response to some questions, though they were not supposed to be able to do so.

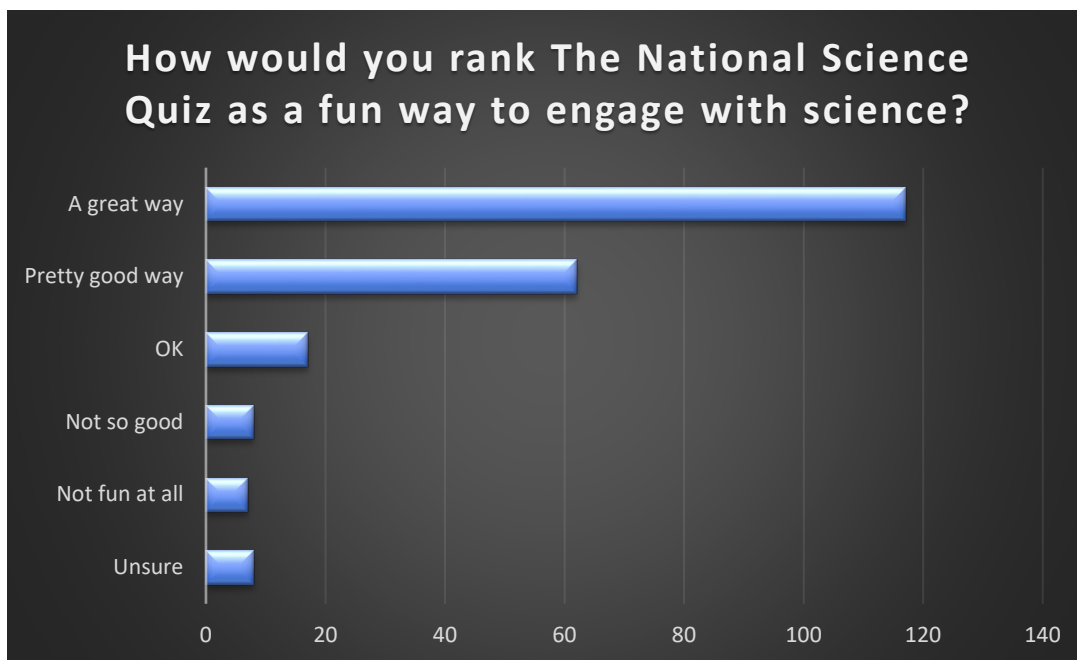


Figure 9. How respondents (N=219) rank the quiz as a way to engage the public with science

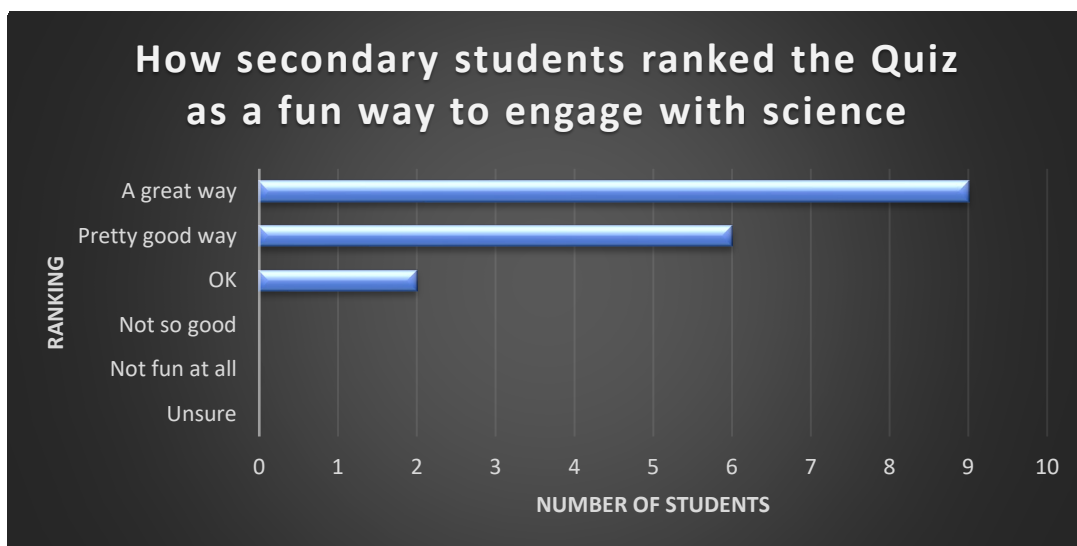


Figure 10. How secondary students (N=17) from the at home audience ranked the National Science Quiz as a way to engage with science.

Question 6. Select from the list the ways you found out about the National Science Quiz

See above for under Promotion/Marketing section for analysis of this question.

Testimonial

The Quiz winners from the live Fed Square audience and at home audience provided feedback on their experience. The feedback suggested they enjoyed the questions, quiz format, panellists and overall experience.

“The National Science Quiz was great, the panellists were entertaining and I learnt a lot about science. I really enjoyed the questions and I will definitely be back next year for another challenge.” (Lucas Sharpe, NSQ winner, Fed. Square, live audience)

“I loved playing along from home, using Slido was easy, and I loved seeing the audience’s response statistics...Had lots of fun.” (Finn Thompson, NSQ winner, online at home audience)

Social media/web analytics

Prior to 2022, the NSQ had an existing website, but no NSQ-branded social media channels attached to it. The NSQ steering Committee this year set up NSQ-branded social media channels. In previous years, the Quiz has used the social media channels of the partners only to promote the event, but it was considered that if the Quiz was to have longevity then it needed to have its own branding and NSQ social media channels should be part of that. The NSQ Steering Committee set up social media channels for Facebook, Twitter, Instagram, TikTok and YouTube. The Live Quiz was streamed through the NSQ YouTube Channel.

The social media channels came online soon after 7 June when the updated website went live. Instagram took a few weeks longer because of account problems beyond our control.

Despite the short time frame to build followers, we consider the audience support and different channels’ effectiveness at promoting the quiz to have been successful. Below are some basic analytics to indicate the level of engagement with each of the NSQ social media channels. It is potentially noteworthy that all top performing Facebook posts in Table 1 were boosted posts (posts converted into paid advertising). In contrast only one of the top performing Instagram posts was boosted.

The analytics for each channel are outlined in more detail below and each analysis is for the period 7 June – 16 August. Definitions of some of the analytics are provided below also.

NSQ Facebook

108 Followers

91 Page Likes

Reach = 192,595

Facebook page visits = 423

Table 1. Top 10 Facebook posts by reach (Period 7 June – 16 August)

Reach	Likes and reactions	Link clicks	Comments	Shares
#23545	19	123	2	4
#14947	28	7	9	5
#11477	4	81	0	0
#9799	23	356	0	6
#9285	2	8	0	2
#9049	30	348	2	13
#7843	12	231	0	4
#4806	30	74	0	13
#4775	17	44	1	8
#4724	8	73	0	2

*Reach in Facebook and Instagram is the number of people who saw any content from your Page or about your Page, including posts, stories, ads, social information from people who interact with your Page and more. Reach is different from impressions, which may include multiple views of your posts by the same people.

Page/profile visits: The number of times your Facebook page or Instagram profile was visited

Denotes a Facebook or Instagram post that was 'boosted'.

NSQ Instagram

26 Posts

97 Followers

216 Following

Reach = 81,526

Instagram page visits = 398

Table 2. Top 10 Instagram posts by reach (Period 7 June – 16 August)

Reach	Likes and reactions	Shares
37577	30	3
8048	6	0
6096	12	4
#5364	5	0
79	8	0
73	11	6
61	5	0
57	4	0
49	4	0
46	9	0

NSQ Twitter

Following are the main Twitter analytics:

136 Followers

Tweets = 52
Tweet impressions = 162,400 impressions
Engagement rate = 2.1% (or 3,410 engagements)
Profile visits = 23,700
Mentions = 171
Link clicks = 520
Likes = 920

Below is the NSQ's top Twitter post for August

Top media for August. Tweet earned 16.8K impressions

IT IS ON TODAY (SUNDAY)! National Science Quiz 2022 [@FedSquare](#) & Online live stream [@YouTube](#)
Register NOW! All on Earth+ welcome. www.nationalsciencequiz.com.au Don't miss this fun
science event! [@charliepick](#) [@SciNate](#) [@Lawrence_Leung](#) [@bradmoggo](#) [@sinag_jacq](#) [@brhollan](#)
[@AstroKirsten](#) pic.twitter.com/YOI45qkpqv



In addition to tweets from the NSQ account to promote the event, we got panellists to tweet about the event from their personal accounts. Below is one of the top tweets from NSQ panellist, Nate Byrne.

NSQ's Top mention earned 528 engagements



[Nate Byrne @SciNate Jul 19](#) Picture it: a bunch of nerds & funny people battling it out for quiz supremacy. Now, do it! With [@charliepick](#) at the helm, [@NationalSciQuiz](#) is going to be a blast. I can't wait. Aug 7 - don't miss out (you can even join us from home, AND there are prizes!) nationalsciencequiz.com.au pic.twitter.com/vddCcZEPAP

Where appropriate, we also promoted the partners/sponsors in Tweets. The following went through the personal Twitter account of one of the partners:

And the National Science Quiz is proudly supported by
 @UNSWScience @monashengineers
 @Monash_Science
 @CoEPlantSuccess @FLEETCentre @TMOS_ARC
 @DefenceScience @ARC_OzGRav @excitonscience
 @ARC_EQUS @Matrix_Inst #NSQ2022
twitter.com/NYSFoz/status/...

Twitter analytic definitions

Link clicks: When a user clicks on a URL or Card in the Tweet

Impression: A Twitter impression is generated every time a person sees a tweet.

Profile visits: When a user clicks on the name, @username, or profile photo of the Tweet author

Engagement: Total number of times a user has interacted with a tweet, e.g. clicking anywhere on a tweet, retweets, likes, follows and replies.

YouTube

57 subscribers

1800 views of the live quiz (as of 2 November 2022)

2,238 views of all videos posted on the site (12 videos posted as part of 2022 Quiz)

TikTok

21 Followers

78 Likes

The number of views for TikTok videos varied depending on the video, but ranged from 11 to 251 views. See Figure 11 below.

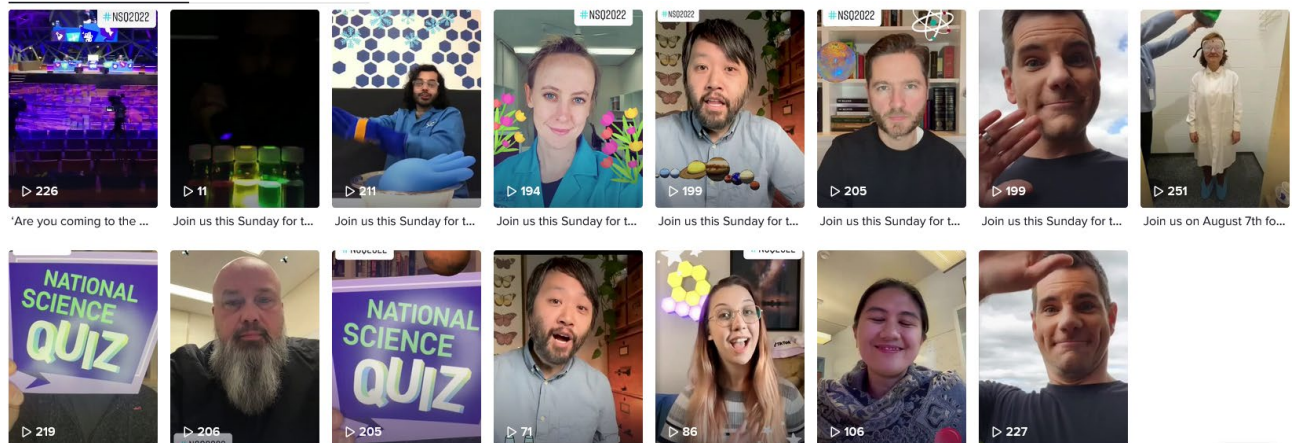


Figure 11. The number of views of National Science Quiz TikTok posts up to 14 September 2022

Reflection

This reflection examines what the evaluation means relative to our objectives for the Quiz, what we thought worked well and what needs consideration and potential adjustment for 2023.

While we did not have a target for audience numbers, we did hope for higher numbers, though we consider the numbers achieved to be satisfactory. Some factors were identified

that may have affected numbers: Sunday night was considered a less than ideal time to get the general public out to a live show and it possibly also affected the online audience. Unfortunately, because of the many COVID cancellations for the venue in 2021 there was a rush on re-booking Fed. Square, so the only options for the National Science Week period were two Sundays, despite booking the venue in November 2021. Saturday afternoon or evening is the preference for 2023. Ticket pricing for the live show was too high and will be reconsidered for 2023, with children under the age of 18 years to be offered free admission. Some of our marketing to specific audiences such as direct mailing to secondary schools and university clubs and societies could have occurred earlier, especially for secondary schools because of longer leads time to get notification out to students through newsletters.

Survey feedback

The overall positive nature of the feedback received in the exit survey suggests the audience enjoyed the experience and they considered it an effective way to be engaged with science. The few negative comments such as those about the need for greater explanation of the answers, the issues with SLIDO and the need for a female captain will be taken into consideration for the 2023 Quiz. The diversity of the panel was, however, carefully considered and that had to be weighed up with the availability of potential candidates.

Social media campaign

The NSQ website only came online on 7 June. This was a short time frame to then set up the social media channels and build an audience. We were not relying on the NSQ social media channels to have a large effect on the event's success, but to be a base to direct people for promotional content via the other marketing options employed. But the number of followers and engagement with the different NSQ social media platforms was higher than expected and may indeed have had some influence. Regardless, it should be an effective base to effectively launch the promotion campaign for the 2023 Quiz.

The social media campaign we did use, though done on a minimal budget, was effective given the number of quiz participants from both audiences that learned about the quiz through social media. The social media advertising we employed appeared effective because of the greater reach it achieved, but it is unclear what proportion of the audience participated because exposure to a social media ad as opposed to normal post. The fact that all of the top 10 Facebook posts based on reach were boosted posts suggests that boosting posts is an effective way to engage the audience and raise awareness about the Quiz. In contrast, only one of the top 10 Instagram posts was a boosted post, though there were a lot fewer Instagram posts.

Did we meet our objectives?

The NSQ aims to be a national 'recorded' event for the general public to promote the interest in the sciences in Australia, driven by the collection of ARC Centres of Excellence.

Specific objectives are the following:

- To engage the target audiences with science in a fun and entertaining way
- Through the post-event resources, to engage secondary students and teachers with science and expose them to a greater breadth and depth of the opportunities in STEM.

The Quiz brought together five ARC Centres of Excellence, two other partners and one sponsor. Together we developed and hosted a high-quality event on a limited budget for the expectations of what we wanted the event achieve. The exit survey analysis strongly suggests that we developed an event that engaged the audience with science in a fun and engaging way and on event night we reached approximately 1200 people based on the number of views of the YouTube live stream plus the number people attending the live show at Fed Square. This is a conservative number given there were individual registrations for people that represented a team.

While there were a number of secondary students in the online and live audiences, most of the impact from the last objective will be part of the evaluation for part 2 of this report. There were 17 respondents in the exit survey, however, that identified themselves as secondary students. While this is too small a number to draw any definitive conclusions, the responses suggest that they had a positive engagement with the event and that the questions and format are pitched appropriately.

Reflections for 2023

Who is our audience

This year we defined our audience as the general public and secondary teachers/students. There is scope to be more definitive about these audiences, especially the general public so we can more effectively target promotion, show content and post-event resources to those audiences. Anecdotally, the audience for the live show at least, was likely those already engaged with science. For example, at least 40 people in the live audience were linked to NSQ partners. While we did not try to understand our audiences' relationship with science through any survey mechanism, if one of our objectives is to build a more positive relationship between the public and science then we need to develop strategies to target those less engaged with science. Developing a mechanism to better understand our audience may be a consideration for any evaluation in 2023.

Partner/sponsor contract

Partner and sponsor contracts or agreements that outline partner sponsor obligations and benefits for each level of sponsorship should be more formalized and signed off at the level of the director (or equivalent). There was a lot of the 2022 Quiz operation and cooperation between partners that happened on good faith. In this instance, it was largely successful, but there were instances that highlighted the necessity of a more formal arrangement for future events.

There is a listed benefit in the partner prospectus that states a partner can nominate a scientist from their organization to be a panelist. This needs an amendment to make it clear that this is not a guarantee. For instance, this year we had more partners than places for panellists and each partner getting a scientist from their organization as a panelist was not possible.

Steering committee

The Steering Committee worked well together and was successful in delivering a quality event. There was, however, instances when members were unable to fulfil their duties, through circumstances that were either out of their control or the committee was aware of in advance. One of the Steering Committee member obligations is to provide a proxy to step in for them in such circumstances. This did occur, but not always successfully and some

actions by proxies were not carried out in a timely or effective way. The availability of and proxy's awareness of their role needs some consideration for 2023.

Consideration should be given to appointing a dedicated financial officer to ensure the budget is managed effectively, including managing the incoming and outgoing income/expenses.

There is scope to take greater advantage of the operational committee to help take some of workload off the Steering Committee.

Marketing

The overall approach to marketing was effective, and should be repeated for 2023. An earlier start time should be considered and more specific targeting to our defined audiences.

With secondary students and teachers, we can build on what we have done for 2022, though with some consideration for a more comprehensive marketing plan specific to this audience.