THE

GiST

Girls in STEM Toolkit

Evaluation Report

Version 1.0   May 2024

Education
Services
Australia

Contents

1 Background

Funded by the Australian Government Department of Industry, Science and Resources, the Girls in STEM Toolkit (The GiST) project involved the development of an online STEM toolkit that provides girls with tools for understanding how their existing skills and interests can link to STEM careers and study pathways.

As well as information for students, The GiST includes resources for teachers, school leaders and families. These resources are designed to inspire and encourage girls to feel confident and enthusiastic about STEM and take advantage of the increasing number of current and projected STEM-related jobs.

The Toolkit is accessible as a digital platform and features a STEM career quiz to match girls' strengths and interests to possible study pathways and careers in STEM. It's promoted through a range of communication channels and is accompanied by a series of professional development webinars.

ESA has used the framework of the Australian Government Women in STEM Ambassador's National STEM Evaluation Guide to plan, design and undertake this evaluation of The GiST.

Many changes were made to The GiST website over the period of the project, in response to findings from previous evaluation activities. Therefore, some of the questions in the surveys and interviews were tailored to garner feedback about the usefulness and effectiveness of these new features and activities, including:

- updated structure, look and feel, and navigation across the site
- new webinars
- new image bank
- learning and employment pathway maps on some profiles
- creation of a student competition
- subject-based pathways through the career quiz.

Some new features of the site are due for release during or after the evaluation, including:

- the STEMosphere exploration and navigation
- suite of new lessons focused on engineering concepts
- professional learning course: The Seven Principles for Inclusive STEM Education in action.

These yet-to-be-released features arose from feedback from previous evaluation activities but are not included in this report.

| 2 | Purpose |

2.1 Problem

There are too few girls selecting STEM subjects at secondary school, participating in STEM activities and then pursuing STEM careers or pathways.

2.2 Audience

The intended audience for the GiST include secondary school girls, their teachers and families. We have focused on these groups for the evaluation of the existing GiST.

The audience for the evaluation report include:

- ESA project team
- Department of Industry, Science and Resources (DISR)
- Girls in STEM education community

2.3 Goals

Outcomes – Short term

(Immediate – 1 year)

- Increase girls interest in STEM
- Increase girls belief that STEM careers are creative, collaborative and suited to them
- Increase girls intention to pursue STEM subjects, activities and careers
- Schools become aware of the problem and believe they can affect change to address the issue.

This evaluation is mainly evaluating these short – medium term goals as the GiST has not existed for long enough to evaluate the longer term goals outlined in the Evaluation plan.

2.4 Key Evaluation priorities

The GiST team identified three key evaluation priorities in the Evaluation plan, as outlined below.

Evaluate the effectiveness of the GiST for teachers:

- Do teachers find the resources on the GiST useful in supporting them to improve girls' participation in STEM?

Evaluate the usefulness of the Career quiz for students:

- Does the quiz guide students to discover STEM careers and does it provide useful information?

Evaluate the usefulness of the GiST for families:

- Are the resources on the GiST useful for families to support / encourage their girls into STEM pursuits/pathways?
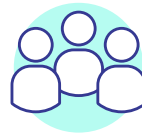
These questions formed the focus for the evaluation activities detailed in the following sections of the report.

3 | Method

This evaluation of The GiST was informed by multiple evaluation activities, including:

A questionnaire for educators, parents/carers and other stakeholders

One student focus group

One teacher focus group

Google analytics data from website

Review of previous discovery findings and the 2021 Evaluation report.

Each of these activities is described in detail below, along with key insights and strategies for success.

3.1 Questionnaire for educators, parents/carers and other stakeholders

Detailed here are some selected key metrics and insights from the data. The questionnaire data is listed in more detail in Appendix 1. The full list of questions and response options are attached as a separate document.

3.1.1 Promotion

The questionnaire was promoted via multiple channels, including the ESA newsletter, The GiST newsletter and various social media channels. The promotion offered five $100 gift cards for five randomly selected participants. More than 5,000 spam responses to the questionnaire were removed before analysis.

3.1.2 Respondents

In total, 20 questionnaires were completed from valid respondents. This is fewer responses than previous evaluation. The timing of the data collection (which overlapped with Easter term break) may have contributed to this, or perhaps this is due to a level of 'feedback burnout', given so many products and services seek ratings from their customers. Regardless, the data from the smaller sample size is still useful and provided many insights.

The questionnaire was structured to allow for different pathways through the questions for each audience, with some questions asked to all participants, and some questions that differed according to their indicated role or how they responded to previous questions.

Participants were asked to indicate whether their main role in using The GiST was as a professional educator, a parent/carer, or another role. Those that indicated 'another role' included three working in STEM education and one STEM professional.

PARTICIPANTS

12 EDUCATORS

4 PARENTS/CARERS

4 OTHER

Educators were asked for a more detailed breakdown of their role and indicated as follows:

- Seven educators indicated they were classroom teachers, (five secondary, two primary).
- One indicated they fulfilled a principal or deputy principal role.
- One respondent indicated they fulfilled a career advisory role.

Parents and carers were asked for the schooling level of the students in their care. Two indicated primary school students and two indicated secondary school students.

Participants were also asked about the importance of STEM subjects for girls. All agreed that it was at least 'Very' important.

How important do you believe STEM subjects for girls?	
Extremely	14
Very	6
Neither important not unimportant	0
Very unimportant	0
Extremely unimportant	0

Note that of the four parents/carers, only one gave the response 'Extremely' important.

Of the 'Other' group, all gave the 'Extremely' important response.

3.1.3 Usefulness of the resources

In general, participants all agreed that the resources they found on The GiST were at least 'Moderately useful', with the majority stating the resources were 'Very useful'.

How useful do you find The GiST resources?	
Extremely useful	2
Very useful	10
Moderately useful	6
Somewhat useful	0
Not at all useful	0

Participants were also asked whether they found the resources they were looking for, when they visited The GiST. Responses were as follows:

- Yes, I found what I needed on The GiST website (n=13).
- Yes, but I found what I needed on another site (n=2).
- No, I searched The GiST and elsewhere (n=3).

While it is encouraging that most participants found what they were looking for, respondents were asked to elaborate when they needed to search elsewhere. Some responses included:

> *I wondered if there might be resources/opportunities for businesses/women in STEM who want to offer their support.*
> *– STEM professional*

> *In relation to engagement workshops/activities/ways to get girls engaged in STEM, I did find loosely what I was looking for. However, I had to look elsewhere for further info and details.*
> *– Secondary school outreach professional*
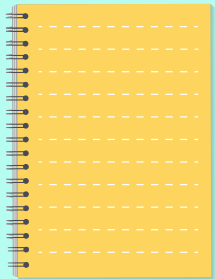
When asked about what other resources participants might find useful, the most frequently selected categories included:

- Girls/women in STEM in the news (n=14)
- Ways to connect with experts and role models (n=13)
- STEM subject advice and learning pathways (n=12)
- Ongoing/current STEM competitions for girls (n=12)

All questionnaire participants were asked whether they would recommend The GiST website to friends or colleagues. This question offered an 11-point scale; no ratings below 6 were given.

How likely are you to recommend The GiST website to a friend or colleague? (1–11)	
11 (Extremely likely)	12
10	2
9	3
8	1
7	0
6 (Neither likely nor unlikely)	2

Most participants indicated that they were 'Extremely likely' to recommend The GiST to others. The two respondents who gave a 6/11 response were also the two respondents who had never visited the site prior to participating in the questionnaire.

When asked why they gave this rating, a range of response were given, including:

... as one of countless women who only found the confidence to enter a STEM field in her 30s, I think you are hitting all the right notes in your approach. The growth mindset is particularly insightful and I wish it had been instilled in me as a young person.
– STEM professional

I believe that it is important to inspire colleagues to have these conversations with students in all classrooms, not just the STEM classroom. Sites like GiST can help equip other teachers with this knowledge.
– Primary school teacher

The site has excellent resources for teachers that can be used with students. A great source of information that is relevant, research-based and easy to read and obtain information.
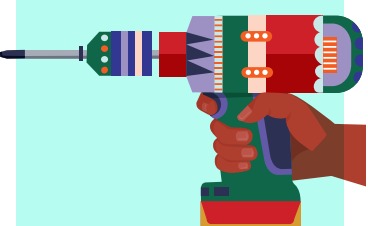*– University teacher educator*

I think we need to do more to break down gender boundaries.
– Parent/carer

3.1.4 New features

As there were new features to the website since the last report, participants were asked to rank the usefulness of the new features, or if they had failed to notice the change. This question was not posed to participants who had indicated that they had not visited the site previously, so there were 18 respondents in this group. The data is summarised below.

How useful do you find this new feature of the GiST?	Very	Somewhat	Not at all	Didn't notice
Career pathway maps	9	3	0	5
Image bank	4	6	2	5
Webinars	3	10	1	3
Website redesign	3	7	2	4
Student competition	6	7	1	3
Newsletter archive	3	10	1	4

(Note: not all respondents answered every question, so not every category totals to 18.)

All these features were rated as at least 'Somewhat' useful. The two features most favoured were the career pathway maps and the student competition. Note that these were also rated well by the student focus group, as outlined in the next section.

One of the respondents who enjoyed the webinars commented that they would like to see upcoming webinars and events dynamically featured on the home page.

3.1.5 Promotion and awareness

The 2021 questionnaire highlighted the need for more data on how users of The GiST find out about the website and resources. Some extra questions were added to the questionnaire to find out how our audience used social media generally, how they found out about The GiST, whether they follow The GiST social media and how useful they find the messaging on our social accounts.

Key insights about social media and The GiST socials:

- Discovery mechanisms varied broadly across all three participant groups, but the highest rank was still word-of-mouth, followed closely by social media and education networks.
- All respondents indicated that they use some form of social media, with Facebook being most popular and LinkedIn and Instagram also featuring high In the rankings.
- About half of the educators and parents/carers indicated that they followed The GiST on social media; all of the STEM professionals followed us.
- Across all three groups, most respondents said that our social media was at least 'Moderately' useful.

3.1.6 Key findings

- Participants (all groups) would recommend the site to others and find the resources useful.
- Parents/carers come with different goals and needs when compared to educators, for example, parents highlighted the value of careers information.
- Two educators highlighted the desire for checklists, templates and easy-to-implement classroom tools for inclusivity.
- Multiple respondents said that they would like to see more cross-curricular linking, in particular for STEAM resources and those with a Digital Technologies lens.

3.1.7 Key quotes

"

It's very valuable in supporting girls to see role models.
– Secondary school teacher

I have been able to weave the use of the resources into teacher training, modelling best practice and then providing educators with continued support for lesson planning and their practice.
– University teacher educator

The image bank has enabled me to quickly include images of STEM women in the PL I develop and deliver to teachers. Also share with educators. I have obtained increased awareness and up to date information on some of the latest Women in STEM. Having current info on who is doing what in the STEM environment is a great engagement tool for teachers and students.
– Primary school teacher

On behalf of the girl who thought she could never be smart enough to do programming, thank you.
– STEM professional

"

A more detailed breakdown of the questions and responses from the questionnaire follows in Appendix 1.

Strategies for success

- ☑ Regularly explore new ways to increase awareness of the GiST
- ☑ Update the home page to highlight upcoming events and webinars
- ☑ Create further inclusivity checklist resources and highlight those that already exist
- ☑ Explore more self-hosted competition events and ways to showcase the entries
- ☑ Provide more STEAM-based resources or make clearer the creative nature of some of the existing careers or resources

3.2 Student focus group

3.2.1 Structure

One 60-minute focus group was held, consisting of eight students from Years 6 to 10. The students completed a 15-minute homework preparation task to visit the site, completing the quiz and a short survey before participating in the focus group session.

3.2.2 Participants

The students were selected from a range of states and territories, across the Year 6 to Year 10 group. Some of the students were nominated by their parents after participating in the 'She Did What' video competition, so were already familiar with at least some of the aims of the website.

It was important that these groups be diverse. Participants' representation included the following:

Ages ranged from **11 to 16** years old

7 Identify as female

1 Preferred not to say gender

1 Primary school student

7 Secondary school students

0 Identify as Aboriginal or Torres Strait Islander

3 Speak another language at home

1 Identify as having a disability

2 Identify as LGBTQIA+

Before visiting the site, students were asked to indicate their STEM career or study pathway plans:

- Five were planning to go to university, three were unsure.
- A variety of study fields were indicated, including illustration, animation, teaching art and textiles, bachelor of medical studies, doctor of medicine, architecture, 'something in science, technology or business'.

3.2.3 Key findings

OVERALL WEBSITE: Students understood the purpose of The GiST very well, almost all used words like 'information', 'opportunities', 'encourage' or 'inspire' in describing the purpose. Students all understood the term STEM before visiting the site. All saw the website as appealing and easy to use.

> *I first started to think about what I wanted to do, and I already knew that I was interested in STEM and this is the first website I sort of came across and I found this website really interesting initially and now looking back, I still refer to it when I'm thinking about STEM careers.*
> *– Year 9 student*

> *I would like to look at the women that have achieved something at life and follow their steps for success. The resources given are very valuable. The main purpose for this website is to inspire girls to become what they want to become.*
> *– Year 8 student*

WOMEN IN STEM: The Women in STEM stories were inspiring and motivating; the students valued that they were real people represented and that the stories reflected their authentic point of view. Students also noted how the profiles broadened their perception of what a career in STEM could be. They valued the learning pathway widgets on the career profiles, observing how they could be useful for planning their own subject selection and career choices.

> *When I was looking on The GiST website, it was actually really interesting seeing how many different STEM pathways there actually were. And I also really liked the profiles of the other women in STEM because that was really interesting, like seeing how different people had a path to get to where they were. I like that liking one particular aspect of STEM isn't just if you like maths isn't just 'be a mathematician', there's so many other things you can do.*
> *– Year 8 student*

GIST CAREER QUIZ: Students found the GiST Career Quiz appealing. The visuals and imagery used are engaging, while the process of completing the quiz is simple. For many, the results are surprising (in a good way), with their expectation of a careers list being surpassed when they see a breakdown of relevant fields using percentages. The quiz gives students the flexibility to look further and find out more about study areas and careers that they are interested in. It provides students with an abundance of information about careers.

> *The use of drawings to depict each choice added an element of fun to the quiz. However, I found that while the test was visually appealing, the choices also had a clear distinction as to why they were separate options (for example, office versus outdoors), which gained additional appeal from my side as I realised the use of this quiz allowed me to truly think about my preferences.*
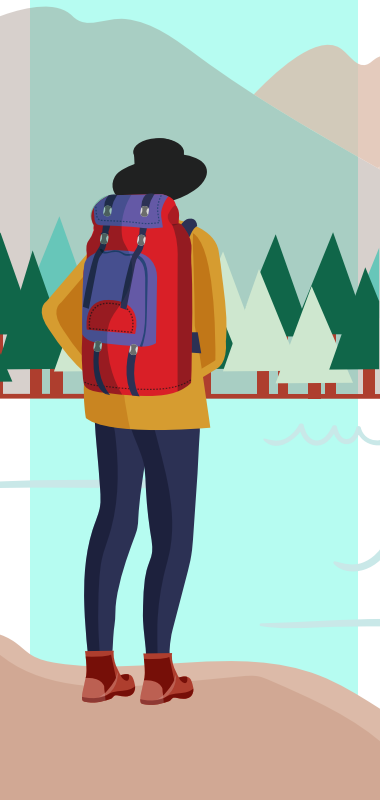> *– Year 8 student*

> *I found the quiz was really good. I felt like it was really simple to do and it gave you a pretty simple result but it could help you sort of figure out where your interests lie.*
> *– Year 10 student*

> *I enjoyed doing the quiz. I did it both through preferred interest and preferred subjects – a number of times each, actually, just for fun.*
> *– Year 8 student*

RELEVANCE: The GiST is relevant for students who have not yet made up their minds about their future pathway and career. It is also relevant for students who have decided to pursue STEM, as it reaffirms that they have made a good decision. It is also relevant to students who may not have seen the connections between their own interests and possible STEM-related careers.

> *I personally had never thought about a STEM career being creative, and when I found out about it all I was like 'Oh, this is cool'.*
> *– Year 9 student*

> *[I liked] the video interviews because I feel like in the future if I'm facing any conflicts in my journey of STEM, I feel like I can relate to these women who have also gone through this journey.*
> *– Year 8 student*

IMPACT: The GiST inspires those in lower years to consider STEM and reassures those who have chosen to pursue STEM. It gives them confidence and allows them to re-evaluate negative perceptions of what it means to be a woman working in STEM.

> *I also really enjoyed the imposter syndrome page, because I imagine that's an issue that a lot of girls particularly experienced being in the field where it's male dominated and everything. So, I like it how there's a page where you can direct all your fears, where you can redirect the apprehension that you're feeling.*
> *– Year 8 student*

3.2.4 Suggested improvements

In general, there were fewer suggestions for improvements for the site compared to the previous student focus group discussions. Most of the suggestions from the last focus group have been implemented, and some of these changes received very positive feedback, for example, the career pathway widgets and the Career Quiz subject choice navigation. However, there were some repeated requests for areas that still have not been addressed, such as bottom-up navigation elements for related content.

Overall website

- For longer pieces of text, increase use of design elements and careful balance of white space for readability and engagement.
- Add hyperlinking between currently unlinked but related areas of the site, for example, add links between career information and relevant profiles, or between images in the image bank and relevant careers and profiles.
- Add some 'you may also be interested in' blocks to the career profiles to link to related careers.
- Reduce the number of navigation elements 'above the fold' on the home page, so that students can see that there is more content to explore rather than just links that are already in the main menu.
- Ensure that events and opportunities on the site are kept up to date.

Career Quiz

- Link career areas to related career areas with similar skillsets or study areas.
- Link to relevant profiles from each career area.
- Although the Career Quiz does have an email saving feature, one student requested a way to save her quiz results – this indicates perhaps this functionality needs to be signposted more clearly.

Women in STEM

- Chunk text into smaller sections, using subheadings, quotes and other visuals.
- Possibly add a search or filter functionality (for example, by related STEM subject) so students can look for specific stories without having to scroll through all of them.

Competitions

- Students suggested more competition-style activities for the site. Those that engaged in the 2023 competition reported not only enjoying the competition itself, but also enjoying watching other students' videos, and bringing their friends to the site to show them the competition videos.

3.2.5 Key comments from students

> " *I'm looking towards something like in the medical career because I've always been really inspired by biology and everything and I grew up watching like, have you seen those emergency TV shows where they have a glimpse into the hospital life? And I always thought it was really engaging, seeing a human body and everything.*
> *– Year 8 student*

> *I like creating stuff, I guess. I like just being able to do my own thing and making something. I'm kinda going down like the technology kind of road.*
> *– Year 9 student*

> *I also like the pathways, as I've said, of how to achieve the jobs and in the profiles of the other women in STEM. I also really liked how it shows you some activities and events that go on for the different STEM subjects. I've been having a look at that, and I found it really interesting how much there actually is to do.*
> *– Year 8 student*

> *I'm in my last year of primary, so […] I'm not really thinking about it too much because it's not really a big of a deal at the moment.*
> *– Year 6 student*

> *… But if I'm a girl that isn't quite as encouraged by perhaps, my peers, to pursue some sort of STEM interest or career, I would want to see something that really inspires me, like some motivational quotes or something telling me that I can do it, right on the front page. And not maybe only on the front page, but each and every single page, like the A–Z careers and everything, practically right on the top. Just a quote that tells me that I – **and every single girl** – can do it.*
> *– Year 9 student* "

Strategies for success

☑ Ensure information about careers is linked to relevant profiles, skillsets and related careers

☑ Continue to add career pathway information to profiles

☑ Explore more self-hosted competition events and ways to showcase the entries

☑ Regularly review the currency of events and opportunities on the site

3.3 Teacher focus group interviews

3.3.1 Promotion

Teachers were invited to participate in the group via a number of channels.

- The questionnaire included an option for educators to express interest in joining the group.
- The GiST newsletter invited teachers to express interest.
- Teachers of students who entered the 'She Did What?' competition were emailed and invited to join.

Participants were offered a $100 voucher to thank them for their time. From the pool of respondents, four teachers joined the group.

3.3.2 Respondents

Four teachers took part in the focus group interviews. Participants were given the option to answer questions either by responding to interview questions via email or through an online video conversation. All four chose to participate in an online panel-type interview.

The video interviews were recorded for note-taking purposes.

The teachers were from a range of schooling contexts, described below.

1. Maths/Chemistry/HPE teacher – Urban secondary, Qld
2. Years 2–6 Technologies teacher – Urban primary, Tas
3. Years P–10 Technologies teacher – Suburban, Vic
4. Years P–6 Technologies teacher – Regional primary, Qld

Three of the four teachers interviewed were teaching at single-sex girls' schools.

3.3.3 Major themes during the session

During the session, the teachers first shared a little of their context and how they use The GiST resources. This varied across the group.

- One teacher indicated that they did not use the resources at all and highlighted the difficulties of adding noncurricular materials into a crowded curriculum.
- Three of the teachers mentioned the value of the lesson plans.
- One said that she considered the professional learning resources to be 'awesome'.
- Two of the teachers considered the 'She Did What?' competition to be extremely engaging, empowering and a valuable learning experience for students.
- One of the teachers commented that they found the GiST Career Quiz to be extremely valuable for secondary students.
- The webinars were raised by one teacher as an enjoyable and inspiring resource, both as a professional learning activity and as a resource for students.

> *I really enjoyed the gaming webinar that you did just recently. That was really inspiring and gives a lot of inspiration for girls and the stories from the women in STEM iare really helpful – I resort to those a lot. I also really like the lesson that is there on the bee habitat. That's been a very effective lesson that's really relevant to the current design curriculum and can be contextualised to wherever you are.*
> *– Primary school teacher*

3.3.4 Key findings and recommendations

In general, the feedback from the teachers was extremely positive. They volunteered a small range of improvements to the site and The GiST program:

- It was suggested that more lead time be given for events or theme days when they are announced on social media as this would allow such events to be more effectively planned for the classroom.
- There were general suggestions for greater opportunity to connect with role models (there was an acknowledgment of duty of care issues here).
- In a similar vein, one teacher suggested that past students make fantastic role models, as younger students connect with those that have a similar background or starting point to themselves, so a resource that scaffolds this process for a school would be a useful addition to the site.
- Also related to making connections, there was discussion that it would be valuable to have a community of like-minded people (educators and STEM professionals) that was built and maintained by The GiST, perhaps a FB group, forum or Discord group.
- The need to support pre-service and beginning teachers in supporting STEM activities and diversity (especially in technology) was raised, and it was suggested resources specifically for this audience would be beneficial.

The value of the 'She Did What?' competition was raised repeatedly during the session, and some specific feedback was offered on how it might be improved:

- Participants suggested that they would value the competition as an annual or at least repeated event, as having a repeated event means that it becomes a resource that they can access and an event that they can plan for.
- The past competition entries were mentioned as a resource for students and teachers, so it was suggested that the resources be maintained, and the competition expanded.
- There was general agreement that the timeline for the competition would be improved if it ran over three terms: announced early in the year, but with a closing date in August, for example. This would allow for early PL sessions, student information sessions, teacher planning, and then delivery of the entries later in the year.

> *My students participated in the 'She Did What?' project as well. Hugely empowering. I'd love to see 'She Did What?' grow and continue because the media that the girls have made has just added [to The GiST website content]. Wow, it was empowering. You know, you always learn so much more from being engaged than from telling, explaining and teaching. And the girls loved that challenge and being connected, I just think that was a bit of a game changer and a really great opportunity.*
> *– K–10 teacher*

Strategies for success

- ☑ Provide maximum practical lead time for events and activities so that teachers can plan well in advance
- ☑ Provide resources that are simple and easy to plan for and implement in an existing program
- ☑ Investigate more options for holding competitions or activities that involve student-submitted work, including maintaining a bank of student-created resources
- ☑ Investigate ways to foster greater connection and community around the GiST

3.4   Analytics data from website

Many changes were made to The GiST website over the period of the project, in response to the findings of previous evaluations. These updated elements of the website are investigated in more detail in the analytics.

Note: During 2023, Google analytics methodology changed from UA to GA4. This introduced different metrics and ways of measuring some indicators, as well as a discontinuity to the data. However, meaningful comparisons can still be made between two broad timespans: the 6-month period July 1, 2023 – December 30, 2023 can be directly compared to the 6 months of July 1, 2020 – December 30, 2020. This is particularly useful as the 2020 data was used in the last evaluation, so the same metrics can be used for a direct comparison of data.

3.4.1   Comparing overall visitor data

July – December 2020		July – December 2023	
Users	10,225	Users	17,662
Sessions	13,685	Sessions	25,159
Bounce rate	60.4% (see note)		
		Engagement rate	67.8%
Avg. session duration	2m 06s	Avg. session duration	4m 53s
Pages/session	2.04	Page views per user	4.20

Notes:

- As mentioned above, some of these metrics are not directly comparable, due to changes in how Google analytics collects and displays data. However, there is enough difference in many of these metrics to see a pleasing upward trend in engagement with the site.
- Bounce rate measures users leaving the page **without** engaging with the content, so is effectively the opposite of engagement rate.

3.4.2   Acquisition

Most of the users during July 1, 2023 – December 30, 2023 were direct visitors, indicating that they came directly to the site via a website bookmark, browser history or URL entry. This indicates that either many users find the site useful enough to have a bookmark kept in one case, or that the site's URL is memorable and easy to type in for visitors.

Channel	Users	Users (%)	Pages per session	Average duration (seconds)
Direct	8,768	31%	2.67	162.16
Organic Search	6,958	25%	2.51	184.12
Referral	6,199	22%	2.63	196.22
Social	2,667	9%	1.71	71.58
Email	2,657	9%	1.60	67.56
(Other)	885	3%	2.05	66.30

Users who entered the site directly tended to view the greatest number of pages during their visit, while visitors arriving from referrals or search tended to spend longer on the site.

3.4.3 Behaviour

Visitors to the site view a wide range of pages. Below are the top 10 viewed over the July 1, 2023 – December 30, 2023 time period.

2023 Top 10 pages by view				
Page title	**Views**	**Users**	**Views per user**	**Average engagement time**
Quiz results	8,200	2,786	2.94	96.11
The GiST Career Quiz	6,612	3,459	1.91	38.58
The Girls in STEM Toolkit (home page)	5,198	3,096	1.68	31.83
Select your preferred interests (quiz)	5,040	2,674	1.88	178.41
She Did What? Competition (new)	2,968	1,592	1.86	52.08
Select your preferred subjects (new)	1,692	1,089	1.55	111.48
STEM careers A–Z	The GiST	1,533	677	2.26	98.96
Seven principles for a gender-inclusive learning environment	1,353	882	1.53	90.24
Creative Career Interest (quiz)	1,269	595	2.13	78.86
Scientific Career Interest (quiz)	1,169	568	2.06	51.85
Outdoor Career Interest (quiz)	1,114	545	2.04	76.91

The GiST Career Quiz saw a large proportion of the engagement in the top 10 pages by view for the period. Note that the time period for the 2021 report covered 18 months, whereas only 6 months of data is being used here.

Some insights from this data:

- The 'Quiz results' page was viewed almost three times per user. This indicates the possibility that students are returning to their results multiple times to explore the different options that they are presented with. This is encouraging, as the page was redesigned with the intention of making different options more visible to students.

- The 'Select your preferred subjects' page also ranks high on the table, with around one quarter of the quiz participants choosing to take this new subject path rather than the interest path through the quiz (1,692 users versus 5,040 users). This is a positive indicator that some students are appreciating this new way of engaging with the quiz. This pathway is taking students less time to work through than the interest path, despite having the same number of questions. As there are no functional differences between the two pathways, this could arise as students are making their choices on this pathway more quickly, suggesting that it might be easier to decide between school subjects than it is to choose between interests.

- Other than the home page, users are spending a significant amount of time on each page in the top 10 pages.

- Compared to the last report, the amount of time each user spends on the home page is down by nearly one-third (90 seconds in 2021, versus 30 seconds in 2023). This is encouraging, as it suggests that users are finding their way deeper into the site more quickly, which was what was hoped after re-designing the structure and navigation of the site. (The engagement time spent on 'content' pages versus 'gateway' pages is discussed in more detail below.)

- Outside of the 'Top 10' table but still interesting: the 'Career interest' sections are fairly evenly spread in visits, aside from 'Office career interests' which is much lower than the others. It seems our young visitors aren't really interested in a career sitting in an office!

As the quiz pages largely dominated the top 10, it's also useful to also look at the top 10 pages when the Quiz and its results pages are removed.

2023 Top 10 pages by view				
Page title	Views	Users	Views per user	Average engagement time
The Girls in STEM Toolkit (home page)	5,198	3,096	1.68	31.83
She Did What? Competition (new)	2,968	1,592	1.86	52.08
STEM careers A–Z	1,533	677	2.26	98.96
Seven principles for a gender-inclusive learning environment	1,353	882	1.53	90.24
Lesson plans for Years 5–6	890	478	1.86	61.05
Careers In STEM	805	532	1.51	37.30
STEM lesson plans	726	487	1.49	16.72
Search results	695	293	2.37	28.99
Examples of STEM in everyday life	693	576	1.20	36.18
STEM webinars for teachers and students	610	276	2.21	63.76
Image bank (new)	609	299	2.04	50.72
Newsletter archive (new)	609	446	1.37	18.06
Lesson plans for Years 9–10	583	336	1.74	52.14

Insights from this data:
- The 'Seven principles' continues to be a popular page, with a high engagement time.
- The lesson plan pages again rank high, with individual lesson pages being lower down the list compared to the last report, perhaps indicating exploration of the new lesson plans added to each of these pages, and with more lessons to view, each lesson has a smaller share of the visits. The lesson plans also account for a large number of the file downloads over the period.
- The image bank has seen a significant number of visits, which is encouraging, given this is a completely new page.
- The 'She Did What?" student competition was incredibly popular. It represents the most visited page of the site, apart from the quiz and home page. It also accounted for the largest number of file downloads from the site for the period. This confirms the anecdotal evidence of the popularity of the competition, as discussed earlier.

3.4.4 Navigation through the site

The site was restructured after feedback from the first evaluation. Working with a UX designer and user feedback, the site was redesigned with the aim of getting users to the information they sought and giving them space to engage with the deeper content in the site.

The outcome of this can be seen in our top 25 page list.

- Pages with a 30-seconds engagement time or less have been highlighted below. These pages with a low engagement time are all top-level pages where the design of the site allows users to quickly flow through to find what they seek.
- The pages below that have a 90-seconds or higher engagement time are all deep, detailed content, and users are reflecting this by engaging with these pages for much longer. This includes the Careers quiz results, the Careers A–Z list and the Seven principles for a gender-inclusive learning environment pages.

Page path	Views	Average engagement time
Quiz results	8,200	96
The GiST Quiz	6,612	39
The Girls in STEM Toolkit (Home page)	5,198	32
Select your preferred interests	5,040	178
She Did What? Competition	2,968	52
Select your preferred subjects	1,692	111
STEM careers A–Z	1,533	99
Seven principles for a gender-inclusive learning environment	1,353	90
Creative Career Interest	1,269	79
Scientific Career Interest	1,169	52
Outdoor Career Interest	1,114	77
Practical Career Interest	1,085	67
People Contact Career Interest	1,072	94
Lesson plans for Years 5–6	890	61
Business Career Interest	824	67
Careers in STEM	805	37
STEM lesson plans	726	17
Search results	695	29
Examples of STEM in everyday life	693	36
STEM webinars for teachers and students	610	64
Image bank	609	51
Newsletter archive	609	18
Lesson plans for Years 9–10	583	52
Students	571	22
Free STEM resources for teachers |The GiST	563	24

Page with less than 30 seconds average engagement time	Page with greater than 90 seconds average engagement time

3.4.5 Search

The top 10 search terms are shown below. This is a consolidated list of terms: plurals and misspellings were grouped, as well as different ways of describing the same page, for example the terms quiz, career quiz, jobs quiz, and similar, were all consolidated into 'career quiz'.

For this evaluation, the period for which the search data is available for in GA4 (from September 2023 – March 2024) showed a much higher number of searches. It is likely that GA4 reports on this data in a significantly different way to UA. Rather than focusing on the numerical search differences, which may be skewed by the different ways of measuring search events, it is useful to observe that the search terms are quite different in nature. The narrower window of data collection in the 2023 data could also mean that search terms are more likely to reflect time-based events, such as international days, events and activities that were tied to The GiST site, such as themed webinars. It also means that one user searching using multiple rephrasings of the same search could skew the data.

2020 Data		2023 – 2024 Data	
Search term	**Total unique searches**	**Search term**	**Occurrences**
posters	14	career quiz	164
quiz	11	she did what	76
poster	7	video game developer	63
drone	6	sports	63
imposter syndrome	6	bees	58
paramedic	6	drones	52
stem	6	engineering	49
webinar	6	coding	42
bee	4	veterinarians	40
books	4	sports medicine	40

Other insights made from the search term data include:

- The quiz continues to be a priority search target for users. This aligns with other data about page visits on the site.
- 'She did what?' is a significant term, again reflecting the popularity of the video competition held during this time period. Again, page visit data confirms this popularity.
- Specific career terms were very popular search terms.
- Sports, sports medicine and specific sport names (such as basketball and NRL) were also significant search terms during this period.
- Terms related to video game development were significant in the list, leading up to the game development webinar.

- It's possible that with a small number of searches to draw from, that a class could be directed to perform a search by a teacher as an example of how to use the site, and any group of 30 searches would skew this data wildly, thus it's important to keep the small number of searches in mind.

The top 300 search terms are shown below as a cloud, again with consolidated terms. This gives a general feel for the kinds of resources and information that users were searching for.

3.4.6 Quiz interactions

As the quiz was enhanced since the last report, it is worth drilling down further into the data.

Page title and screen name	Views	Average engagement time
Quiz results	8,200	96.11
The GiST Quiz	6,612	38.58
Select your preferred interests	5,040	178.41
Select your preferred subjects	1,692	111.48
Creative Career Interest	1,269	78.86
Scientific Career Interest	1,169	51.85
Outdoor Career Interest	1,114	76.91
Practical Career Interest	1,085	66.87
People Contact Career Interest	1,072	93.97
Business Career Interest	824	66.70
Office Career Interest	503	57.81

This data is useful as it explains well how users are engaging with the quiz.

The first page that users encounter is The GiST Career Quiz page, and this has a low engagement time, suggesting that users move quickly from here to selecting their navigation method for the questions. About three-quarters of users then chose to navigate by 'interests', and one-quarter via 'subjects'. Both of these methods have a high level of engagement, each with a large engagement time and a large number of engagement events, as participants made their choices. It was found that the 'interests' navigation takes students longer to complete than the 'subjects' option, as discussed above.

Students are then taken to their results page. Note that this page has a high number of views, as it had more views per visit, reflecting how students navigate from this page to each career interest and back again to explore their options. This page also has a high engagement time as students read their results and explore each career interest area.

Finally, each career interest page has a fairly high engagement time. The rankings here do not necessarily correspond to the rankings that users received from their quiz, but it does reflect the rankings of which interests they subsequently investigated further. Interestingly, the highest ranked page is the Creative career interest page, which also has by far the highest engagement time of the interest pages.

3.4.7 When the quiz is accessed

One of the questions that was of interest was around how and when the quiz was used by students and in what setting. Were they using it at school (as directed by a teacher) or at home (either independently or as directed by a parent)? In attempting to answer this, the analytics was interrogated to see what times of day the quiz pages had the most engagement. The data was then filtered by Australian students. Given this data would also be spread across time zones, it was filtered to show the eastern states only, to try to narrow down times to one single time zone. The following graph shows this data.

Views per hour of the day – Qld, NSW, Vic, Tas (AEST)
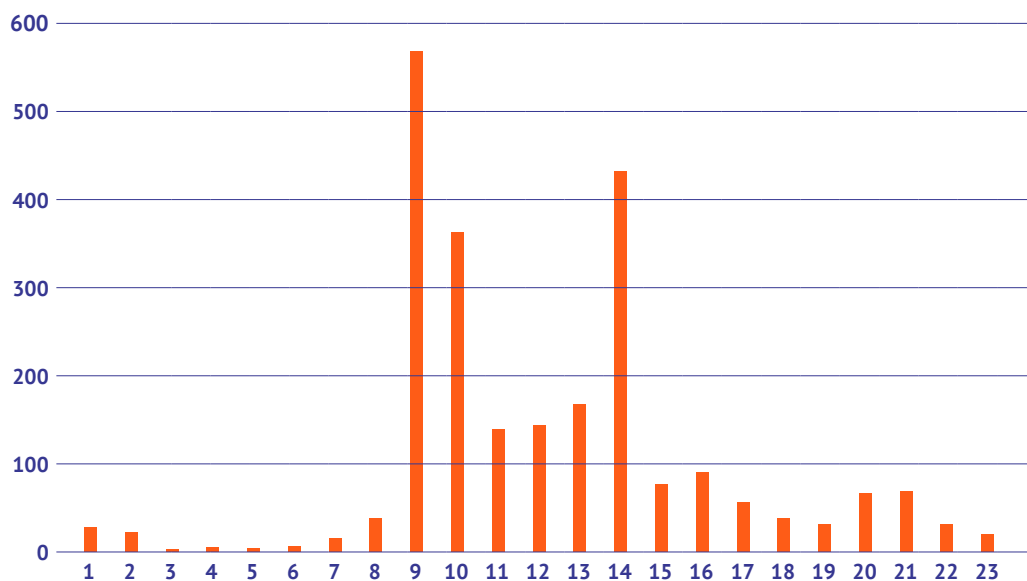
Insights:

- Most of the visits to the quiz occur during school hours. We heard from our teacher focus group that they use the quiz during class time, and the data here reflects that.
- There is also a significant 'bump' in the data in the evenings, suggesting that students are visiting the quiz in their own time as well, either independently or as part of a family activity. One student in the student focus group told us that after completing the quiz, she later showed her mother the quiz and her results.

3.4.8 Key findings

These analytics provide evidence that The GiST continues to provide useful resources for all key audiences. There is a significant level of time spent on the site by visitors, indicating that they are engaging with the site content. Finally, there is a relatively low number of searches over the duration examined, suggesting that users easily find what they need without resorting to search, so the design of the site is helping The GiST users meet their goals.

The addition of the newer features of the site such as the image bank, the new lessons, the alternative quiz pathways, the webinars and the student competition all seem to be featuring well in the number of visits and engagement time on the website, suggesting that these pages have value to our audience.

Strategies for success

☑ Ensure site structure remains easy for users to navigate

☑ Keep the site updated with relevant and engaging content

☑ Ensure the site search returns relevant results

☑ Review search terms when planning additional content

☑ Continue to create new content (for example, webinars, competitions) to promote the site and keep visitors returning

4 Conclusion

4.1 Did we address our key priorities?

In conclusion, let's return to the key evaluation priorities as the purpose for gathering and synthesising this information.

Key evaluation questions:

- Do teachers find the resources on The GiST useful to support them to improve girls' participation in STEM?
- Does the Career Quiz guide students to discover STEM careers and does it provide useful information?
- Are the resources on The GiST useful for families to support and encourage their girls to pursue STEM pathways?

Overall, the evaluation activities indicated overwhelmingly that users of The GiST find the site useful, informative and inspiring.

4.1.1 Teachers

The evaluation reveals that teachers find the resources on The GiST useful in supporting their efforts to improve their students' participation in STEM. The questionnaire results, the site analytics data, and interview responses from participants affirm that The GiST resources give practical and powerful strategies to implement change in their schools and classrooms.

Teachers also highlighted the importance of opportunities to plan for STEM-inclusive activities in their own context. Whether it's a competition, a theme day or incorporating STEM careers into their learning programs, teachers need time and strategies to make these experiences meaningful for students.

One teacher said during the focus group:

> *My college is actually preparing the calendar for next year, and because we're so busy, if it's not in the calendar, you'll have trouble getting it done.*

Teachers also found the new resources and activities useful, including the webinars, competition, image bank and career pathway maps. The value of the competition-type activity was highlighted multiple times in the questionnaire and the focus groups, and the website analytics also confirmed the popularity of the page and the resulting videos.

4.1.2 Students

The student focus group resoundingly voiced their appreciation for the resources on The GiST, particularly the Career Quiz and the profiles of Women in STEM. They found the quiz expanded their ideas about what careers in STEM could be, and valued the various profiles of women that showed how this could look in reality.

The students that were involved in the 'She Did What?' competition were also emphatic about the value of this activity, in terms of learning, engagement and connecting with others.

Students found the new career pathway widgets on profiles very useful and requested more of these learning pathways in women's stories, as well as asking for more interconnections between related areas of the site, to allow them to explore the resources.

> *So, what I mostly look at was the profiles. I found them really interesting and inspiring. Like how you could see that like school choices and you can see someone's pathway to being whoever. Well, I really like how it's from their point of view.*
> *– Year 8 student*

4.1.3 Families

The evaluation activities again highlighted the importance of accessible study and careers information for parents and carers of girls. The small group of parents who participated in the questionnaire all agreed that STEM subjects are important and that The GiST site is useful.

One of the teachers from the focus group also responded as a parent about the value she saw in the competition.

Some statements from parents and carers:

> *My child has better access to the things she loves.*
> *– Parent of primary school student*

> *Such a great space to explore different ways to think how and why.*
> *– Parent of primary school student*

> *I saw the competition and I said, 'Oh, [child's name], you could actually use this to enter a competition', and she found out so much information about space and satellites and about how Mars (Buttfield Addison) didn't actually start off going into a STEM career. I think she spent a good three weeks fully indulged in this, and the learning that she got out of it, and even me, just as a kind of bystander parent. She made a video: she used Capcut, she used her Apple device, but she used all of these different editing apps, so it went beyond just meeting the scientist … So that video competition was super engaging, and then she shared that with kids at school… and then their class did it. And that was all student-led.*
> *– Primary school teacher/parent*

5 Appendix 1 Questionnaire summary

5.1 Results

5.1.1 Visiting

Two respondents indicated that they had not used The GiST prior to filling out the questionnaire, but all indicated that they found the site useful now that they had discovered it.

How did our visitors find us?

Respondents were asked how they came to hear of The GiST:

Colleague	8
Social media	7
Search engine	4
Email	4
Blog	2
Conference	4
Facebook ad	1
Education network	7
School	2

Word-of-mouth (colleagues, education networks, school) remains an important way that our audience comes to hear about the site and the resources. Social media is still a large component of our reach, so it's important that we maintain a useful and engaging social media strategy and campaign.

When asked what social media tools and sites they generally used, participants indicated:

Facebook	19
Twitter	6
Instagram	12
Pinterest	5
LinkedIn	12
YouTube	9

This data aligns with findings from the site analytics that show Facebook as the largest number of referrals via social media.

Participants were also asked whether they followed The GiST on social media:

Do you follow The GiST on social media?	Y	%Y
Educators	5	42%
Parents	2	50%
Others	4	100%

About half of the parents and teachers replied that they did, and all of the STEM professionals. Of those that did, we then asked them how useful they found our social messaging:

| Of those that do follow The GiST socials, how useful do they find them?	%Y
Extremely useful	1
Very useful	4
Moderately useful	5
Slightly useful	1
Not at all useful	0

The majority of our audience finds our social media at least 'Moderately useful'. The respondent that suggested it was only 'Slightly useful' also requested more opportunities and activities for students in regional and remote areas; perhaps this is an area we can look to addressing more in our future resources and messaging.

How often do they visit?

Participants were asked to estimate how often they had visited the site in the past year:

How often have you visited The GiST in the past year?	
Very often, at least weekly	1
At least a dozen times	8
A handful of times	3
Once or twice	6
I have not used The GiST website	2

With this small sample, it's hard to draw any conclusions about the visit (or re-visit) frequency of our audience, but it does help to frame the responses from the group.
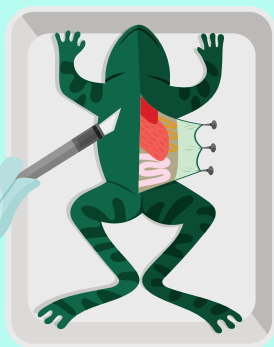
What is their motivation for visiting?

Participants were asked whether they came to the site with the following issues that they were hoping to solve (they could select more than one):

Gender imbalance in STEM	7
Attitude towards STEM from girls	7
Attitude towards girls in STEM from teachers or other adults	1
Learning pathway advice	7
Other (please specify) Other included: Ways to engage girls, Teaching and learning STEM ideas, Student opportunities, Ways to get involved as a woman in a STEM field, STEM siloing, STEM learning dispositions, Tools and resources to improve inclusivity	7

Three of the four parents indicated that they were seeking learning pathway advice for their child.

Educators were also asked for the kinds of resources they were hoping to find on The GiST. The following were the most frequently selected from the 21 educators (they could select more than one):

Classroom resources such as lesson plans	7
Articles/research about girls in STEM	6
Whole-school resources	3
STEM resources for students to use at home	3
Careers information	8
Models to inspire students	7
Webinars	3
Seven principles for gender-inclusive learning	1

Interestingly, many of the teachers also indicated careers information as one of the resource types they sought, just as many were in search of lesson plans. This contrasts with the previous evaluation, where it was almost exclusively parent/carers who indicated they were looking for careers information for the child in their care.

5.1.2 Usefulness

Do visitors find the site useful?

Survey respondents overwhelmingly indicated that the site was useful:

Extremely useful	2
Very useful	10
Moderately useful	6
Slightly useful	0
Not at all useful	0

thegist.edu.au

Which sections of the site do visitors use the most?

Respondents reported using a broad range of the site, with both audiences reporting similar sections as being used the most. Unsurprisingly, the parent/carer group all listed the Careers in STEM section of the site, and almost all of the educators listed the STEM lesson plans and the Inclusive classrooms sections.

Studying STEM	6
Careers in STEM	10
Women in STEM	10
Girls in STEM and inclusive classrooms	7
STEM lesson plans	8
Why STEM matters	7
Getting them interested in STEM	6
STEM community	2
The GiST Career Quiz	2

Did they find the resources they sought?

The majority of respondents indicated that the found what they were looking for on The GiST site. Of those that did not find their desired resources on The GiST, most indicated that they could not find what they needed anywhere.

Yes, I found what I needed on The GiST website	13
Yes, but I found what I needed on another site	2
No, I searched The GiST and elsewhere	3

We then asked those that did not find what they sought on The GiST to give further details about their search:

Those that gave 'No' responses further explained:

- *I wondered if there might be resources/opportunities for businesses/women in STEM who want to offer their support.*
- *I was looking for digital technology content and found that where the T was highlighted it was usually Design and Tech or Digital Literacy. One example had algorithms listed but no evidence of algorithmic design in the lesson plan.*
- *In relation to engagement workshops/activities/ways to get girls engaged in STEM, I did find loosely what I was looking for. However, I had to look elsewhere for further info and details.*

One of the respondents that answered 'Yes, but I found what I needed on another site' commented:

- *I have so far found that using a combination of sites has been most useful.*

Would they recommend the site to others?

Almost all respondents ranked at least 8/11 for their likelihood of recommending the site.

11 (extremely likely)	12
10	2
9	3
8	1
7	0
6 (Neither likely nor unlikely)	2

Note:

- Those that answered 6/11 were also first-time visitors, who may have been motivated to complete the questionnaire for the prize money and therefore not be likely to recommend the site to others.

Respondents were also asked to explain why they gave their rating.

Educators explained:

- *STEM is extremely important for all students.*
- *I believe that it is important to inspire colleagues to have these conversations with students in all classrooms, not just the STEM classroom. Sites like GiST can help equip other teachers with this knowledge.*
- *Great easy to use and relevant resources for high school students.*
- *It has been very informative and has given me answers to questions that I have had. It also has useful information and competitions for students.*
- *It's a good 'one stop shop' for people looking to get a grasp on girls in STEM stuff, how to support them and the context.*
- *It's very valuable in supporting girls to see role models.*
- *Clear, easy to navigate website, relevant information, reliable.*
- *Excellent site, so much information and ready to use resources.*

Parents said:

- *I think we need to do more to break down gender boundaries.*
- *Firmly believe in STEM opportunities for girls.*
- *Such a great space to explore different ways to think how and why.*

Others replied:

- *It's not pink! This was the first thing I noticed about your promotional materials and it is an absolute breath of fresh air. Secondly, as one of countless women who only found the confidence to enter a STEM field in her 30s, I think you are hitting all the right notes in your approach. The growth mindset is particularly insightful, and I wish it had been instilled in me as a young person. If you are ever in need of involvement from women in the immersive tech industry, I would be more than happy to share it with my network.*
- *The resources are high quality and practical. The way the resources and website content are designed is based on best practices. The website and resources are easy to navigate and find.*
- *The site has excellent resources for teachers that can be used with students.*
- *Great source of information that is relevant, research based and easy to read and obtain information.*

Usefulness of new resources and features

Participants were asked about how useful they found the newer features of the website:

How useful do you find this new feature of The GiST?	Very	Somewhat	Not at all	Didn't notice
Career pathway maps	9	3	0	5
Image bank	4	6	2	5
Webinars	3	10	1	3
Website redesign	3	7	2	4
Student competition	6	7	1	3
Newsletter archive	3	10	1	4

In general, the new resources were rated at least 'Somewhat' useful. Given the varied backgrounds and motivations of visitors, we would not expect every resource to be useful to every visitor, so this response is very encouraging. Of note, though, is that the Career pathway maps and the Student competition ranked very positively.

5.1.3 Improvements

Participants were asked for general feedback for how the site could be improved. The following categories summarise some of the concepts repeatedly raised:

- Adding tools (checklists or templates) for evaluating inclusivity in their contexts (and making those that we have more easily discoverable)
- A more dynamic home page that highlights upcoming events (such as webinars, themed days)
- More opportunities to connect – with role models, industry, other schools, internships
- More resources for rural/remote students
- More STEAM resources

Some example statements about improvements:

> *A checklist or similar. For teachers, having a checklist that they could use in their self or peer evaluations. I believe this is on The GiST website somewhere, but I cannot always find it.*

> *Keep as it is and keep it simple.*

> *Maybe have an 'ask us' link so you can ask to connect to a particular professional in STEM for a particular purpose.*

> *I find its resources good and able to share with colleagues. Please keep growing.*