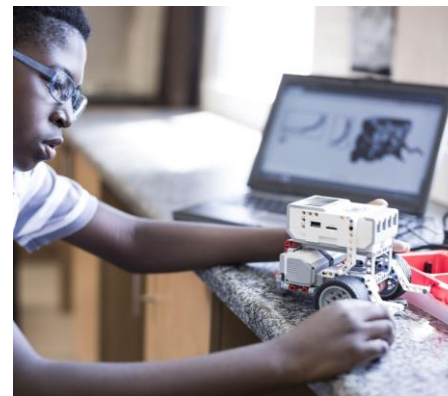


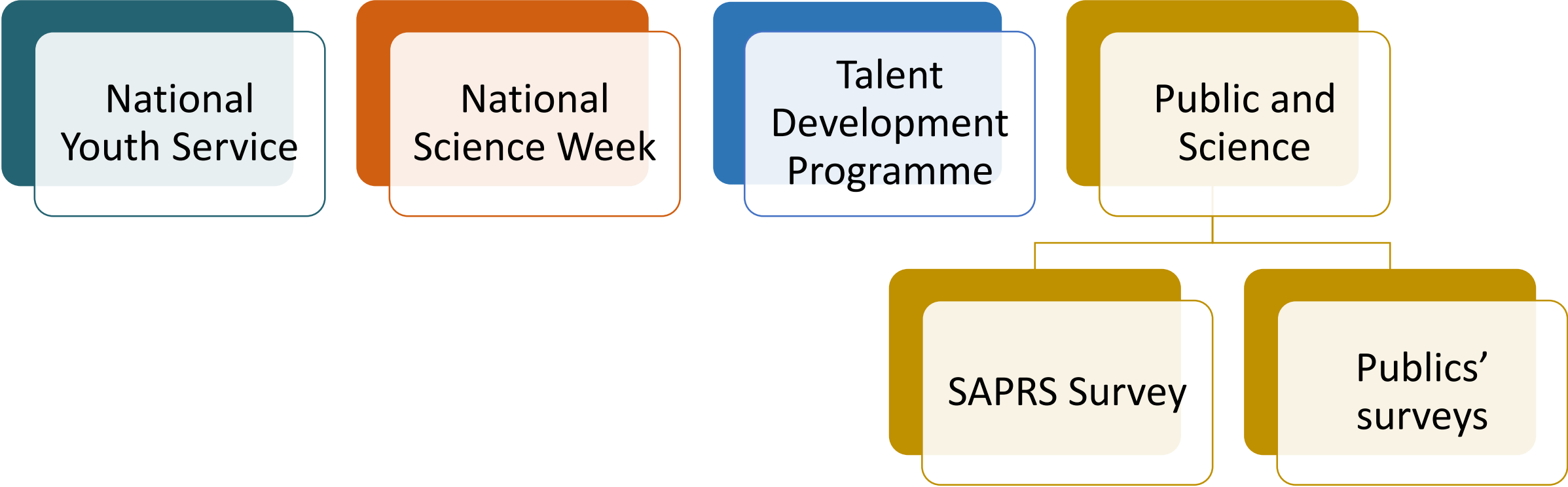
Science Engagement Projects Update

HSRC

14 November 2023



Science Engagement Projects





National Youth Service



NYS findings

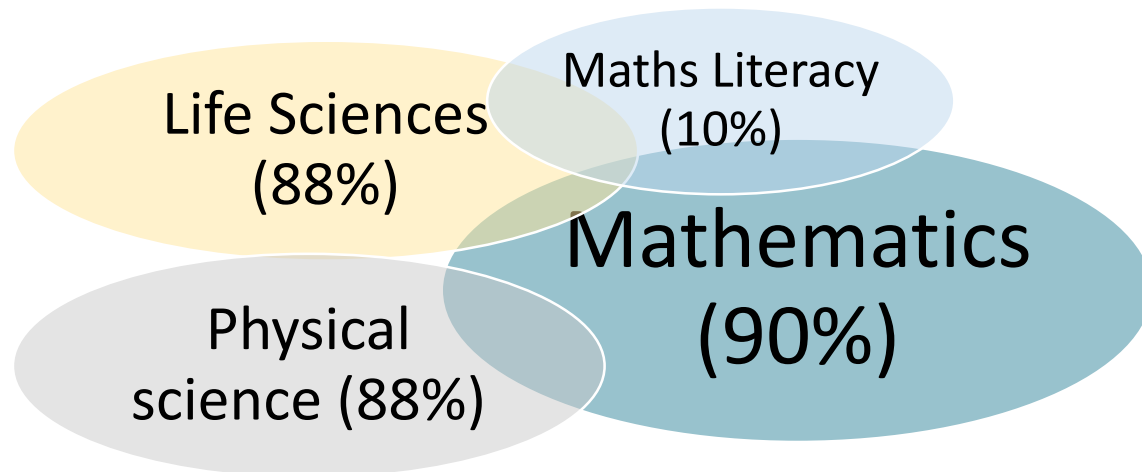
- Findings focus on “Post-NYS” labour market pathways, highlighting:
 - Demographics of the DSI-NYS 2021 participants
 - Their educational related pathways into NYS programme
 - Their experiences in the programme
 - Pathways after the NYS work-experience programme

NYS participants' information

Year of Contact	Cohort (Period of entry)	Participants (Population Database)	Respondents	Response rate
Respondents Contacted in Year of NYS Entry (Year 1)	2021 (1 st August 2020 - 31 st July 2021)	506	395	78%
Respondents Contacted a Year after exiting NYS (Year 2)	2020 1 st August 2019 - 31 st July 2020)	146	106	73%

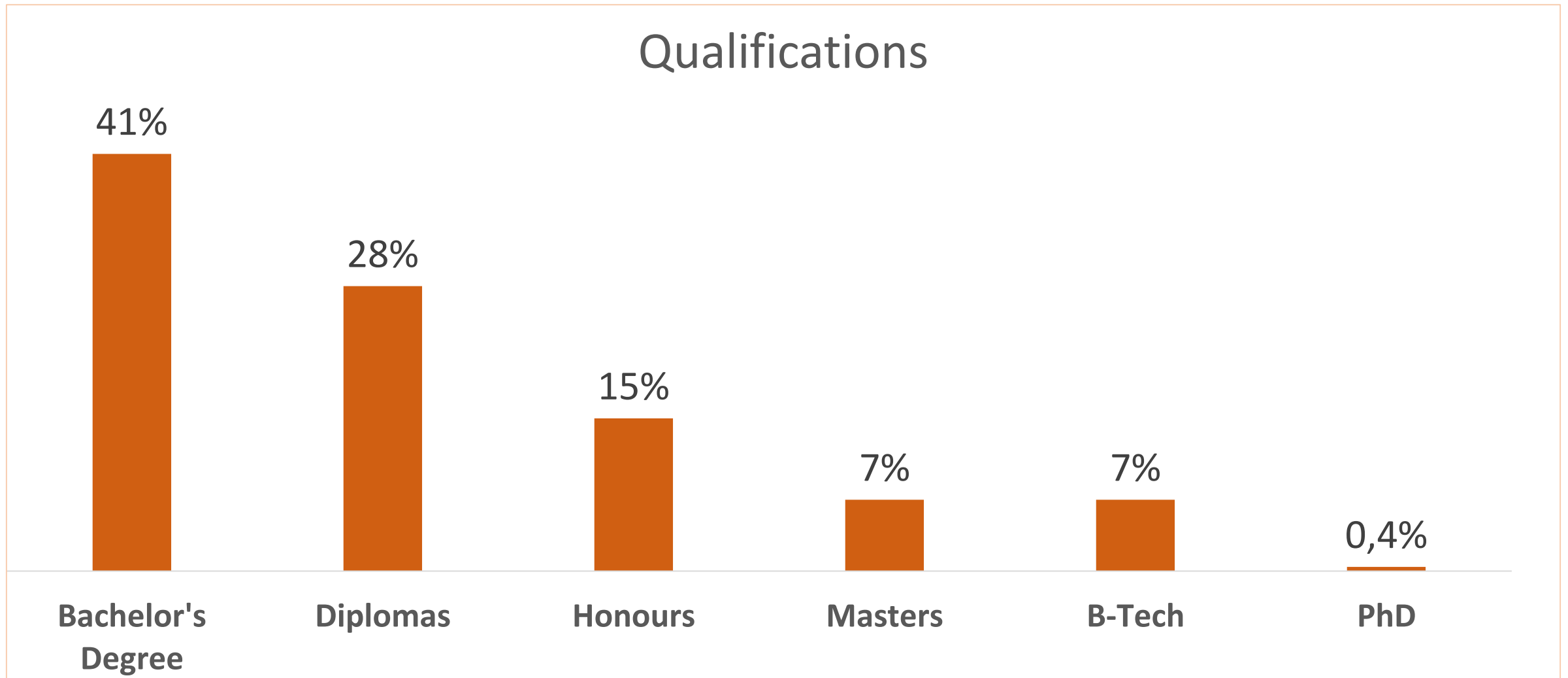
Demographics & educational profiles

General demographics	
Average age	28 years (range: 22-37)
Proportion by sex	Female (59%), Male (41%)
Race	African (95%), Colored (3%), Asian and White (1%)
Provincial location	Gauteng (24%), Mpumalanga (19%), Eastern Cape (15%)
	All other provinces range between 12%-2%

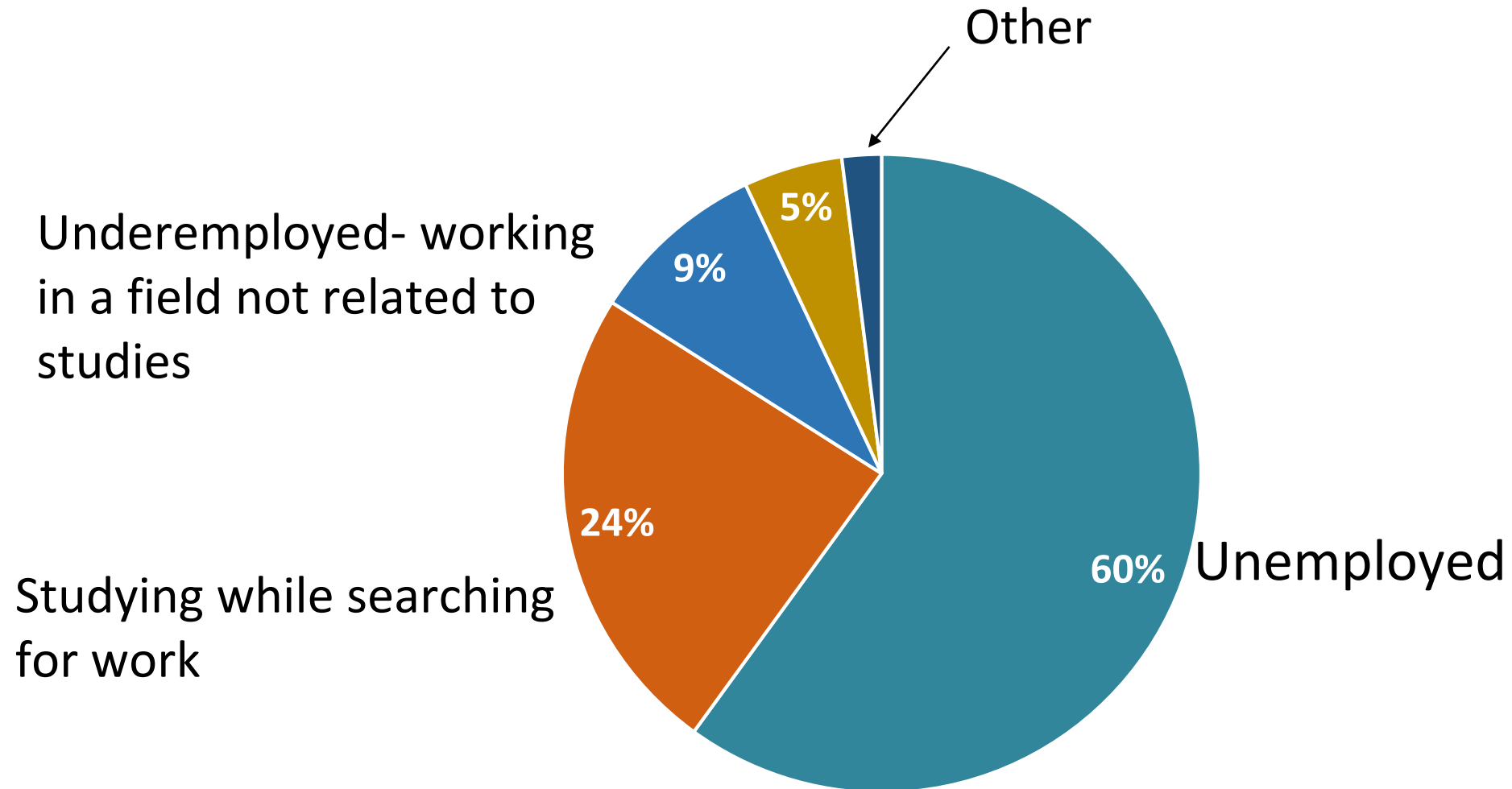


STEM GRADE 12 SUBJECTS
Majority of respondents
took Mathematics

Tertiary academic profiles



Labor market profile: Before NYS participation



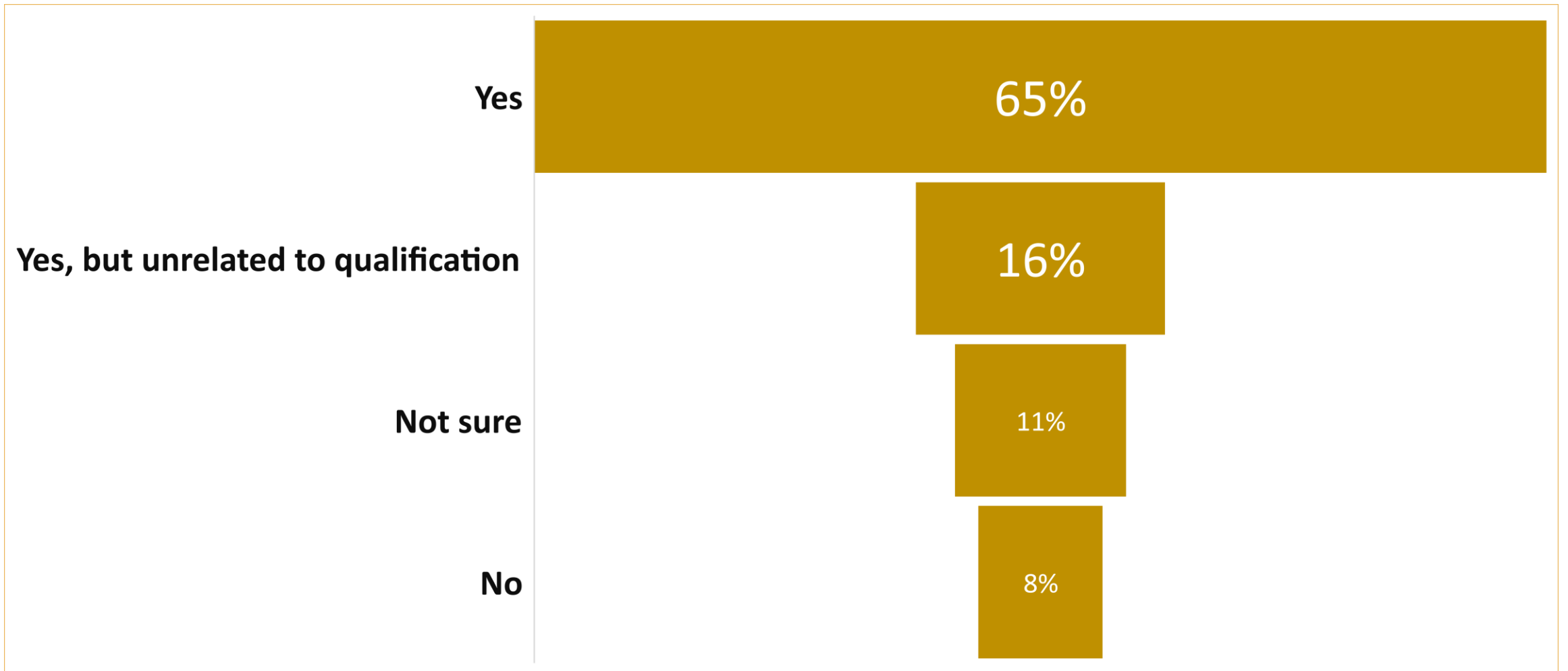
Host institutions

Host Institutions	Number of participants
Schools	113
Science Centres	110
Parastatals and Government-Funded Organizations	76
Governmental Departments	58
Science Communication Platforms	43
Academies/ Training Centres	37
Private Sector	37
Science Promotion Organizations	24
Research Councils/ Research Institutes	4
Tertiary Institutions	4
Total	506

Skills gained

Type of Skills	Percent who gained skill (%)
Technical skills	77
Ability to work in teams	75
Interpersonal skills	73
Ability to manage more responsibility	71
Ability to communicate science to others	68
Science, Technology, and Engineering skills	58

Outcomes of the NYS



Responses to whether NYS increases employability (Cohort 2021, n=395)

Labour market profile: Post-NYS participation

Current activity	2020 cohort (1 year after exiting)	2021 Cohort	Combined
Working	55%	33%	44%
Studying	10%	17%	13%
Working & Studying	13%	9%	11%
Neither Working nor Studying	22%	26%	24%
Volunteering in the NYS programme	-	15%	8%
	100%	100	100

Post-NYS participation: Dignified quality work



Good working conditions



Opportunities for workplace training



High level of job satisfaction



Job is inline with intended career paths

Almost half of the respondents reported to have received a good work experience



High level of work experience

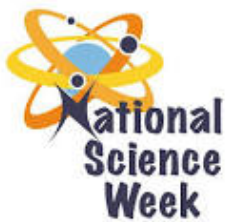
Concluding remarks

- Dual challenge of skills shortages and graduate unemployment in STEM fields
- Initial work experience is often demanded from new employees.
- DSI-NYS plays a crucial role in connecting graduates with job opportunities.
- Partially achieving goals, as 29% of respondents were not from the targeted unemployed and underemployed groups.
- This contribution enhances STEM human capital in the country.

Way forward

- 2022 cohort baseline and 2021 cohort tracking
- 2022 baseline and contact information received from SAASTA.
- The database was checked and divided into the participants who are on 1 year contracts and those on longer contracts to ensure that the correct survey is administered to them.
- There are 131 participants on 1 year contracts, and 57 on 2-year contracts.
- Data collection will start in February 2024.

National Science Week



NSW 2022 and 2023

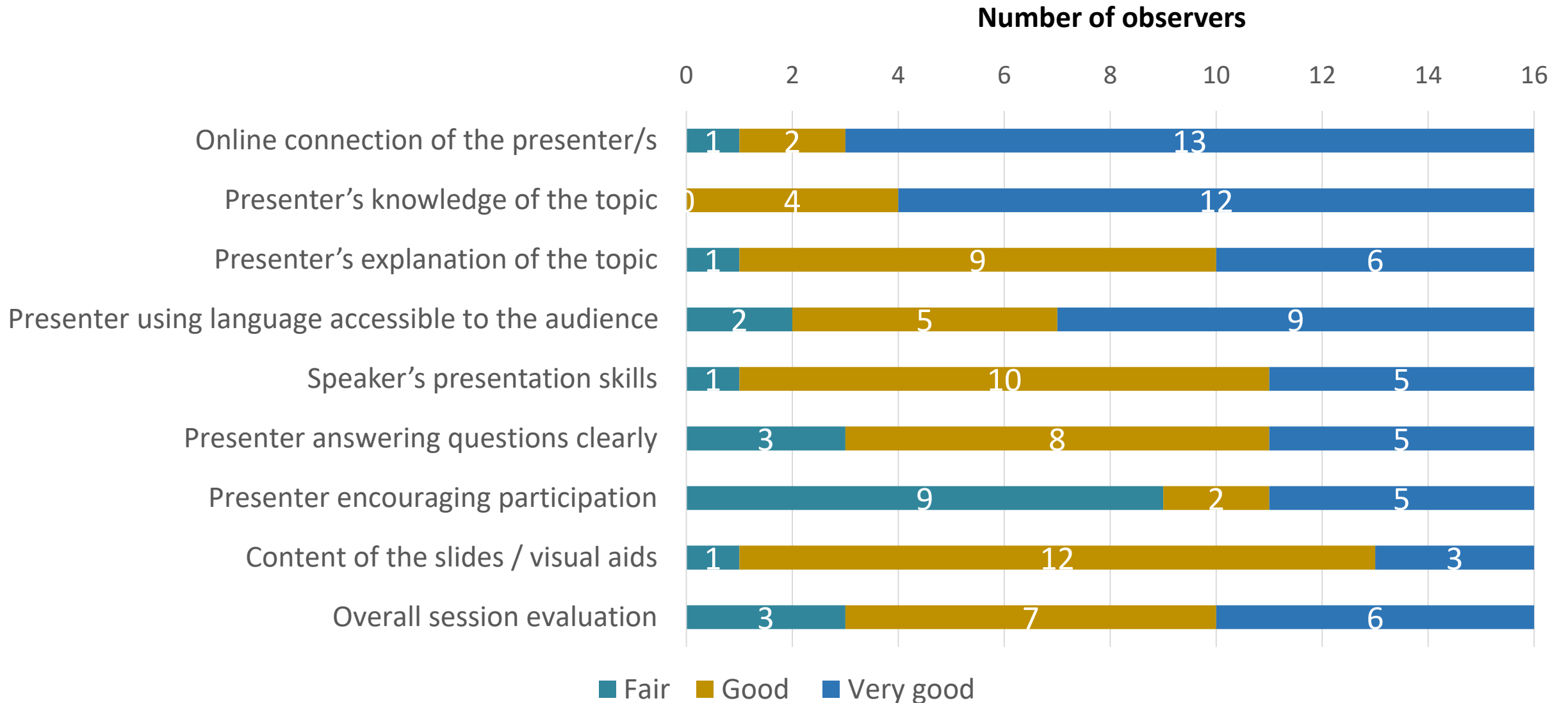
- NSW 2022
 - Report finalised and submitted
- NSW 2023
 - Data collection training
 - Data collection by HSRC and SAASTA from 31 July to 5 August in 9 provinces

NSW 2023

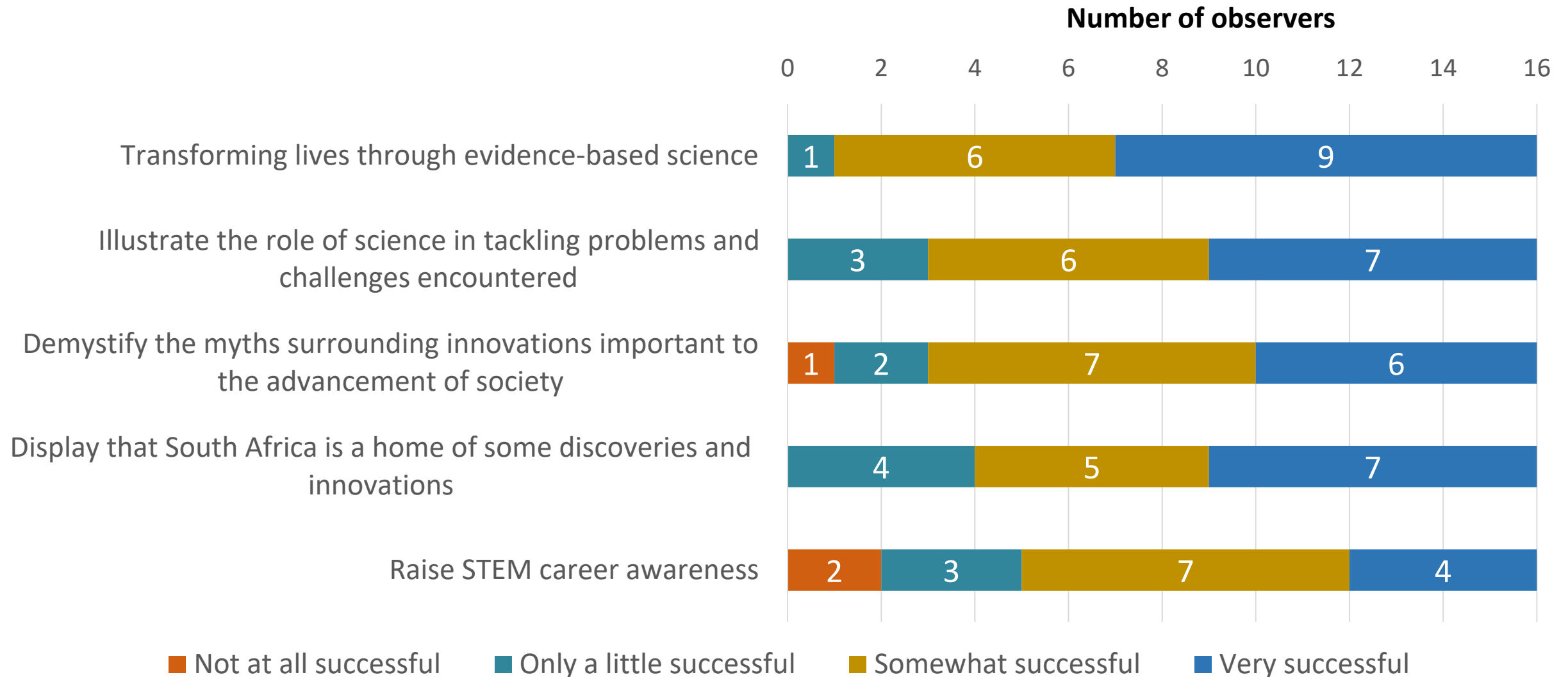
- Data collection instruments
 - Grantholder Survey
 - Reflections on NSW 2023
 - 56
 - Webinar Observation Schedule
 - HSRC and SAASTA observers
 - 16
 - In-person Observation Schedule
 - HSRC and SAASTA observers
 - 73: 39 sites and 34 schools
 - Non-grantholder Survey
 - Reflections on NSW 2023
 - Distribution by SAASTA



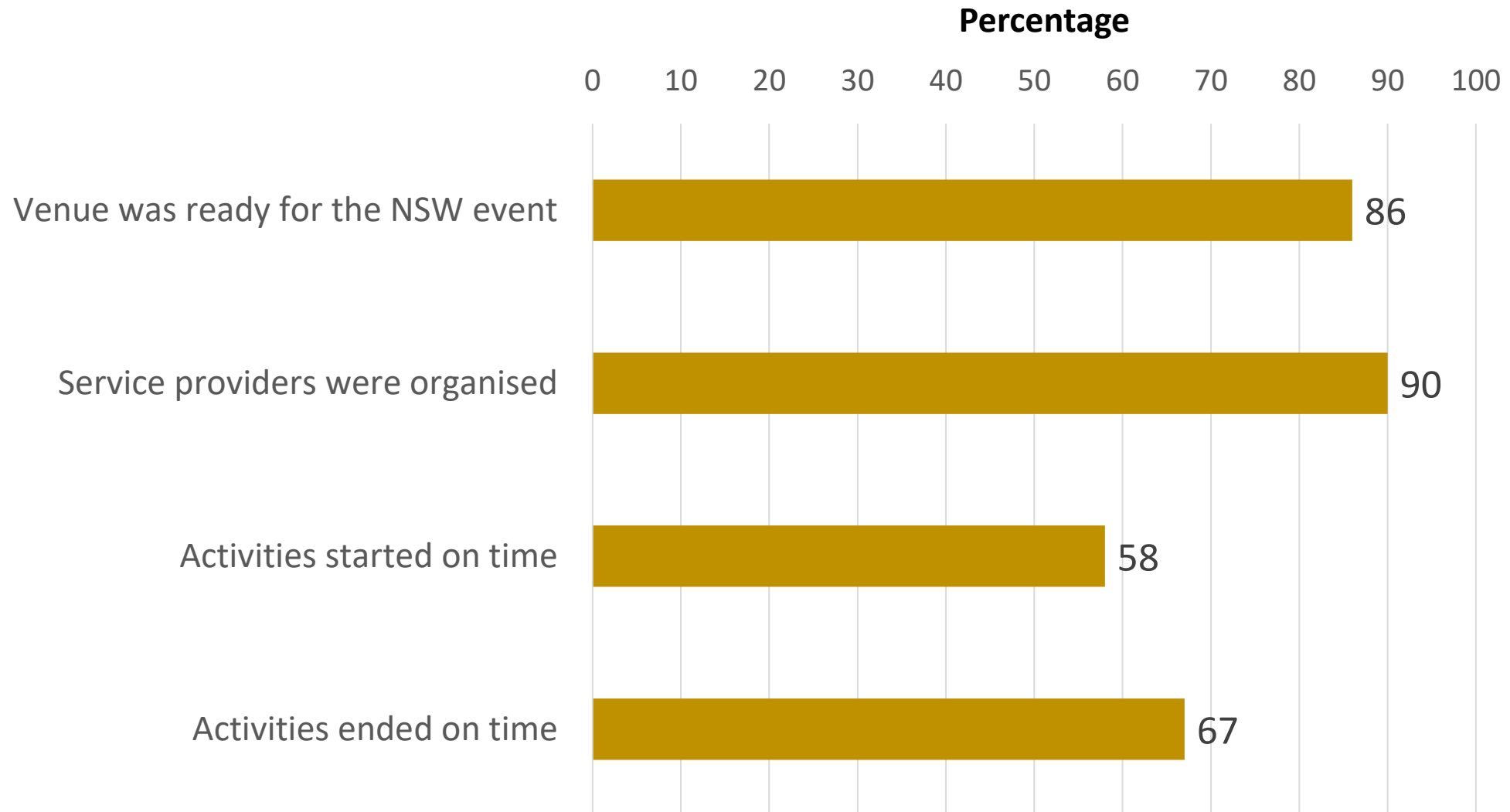
Webinars: Observer ratings



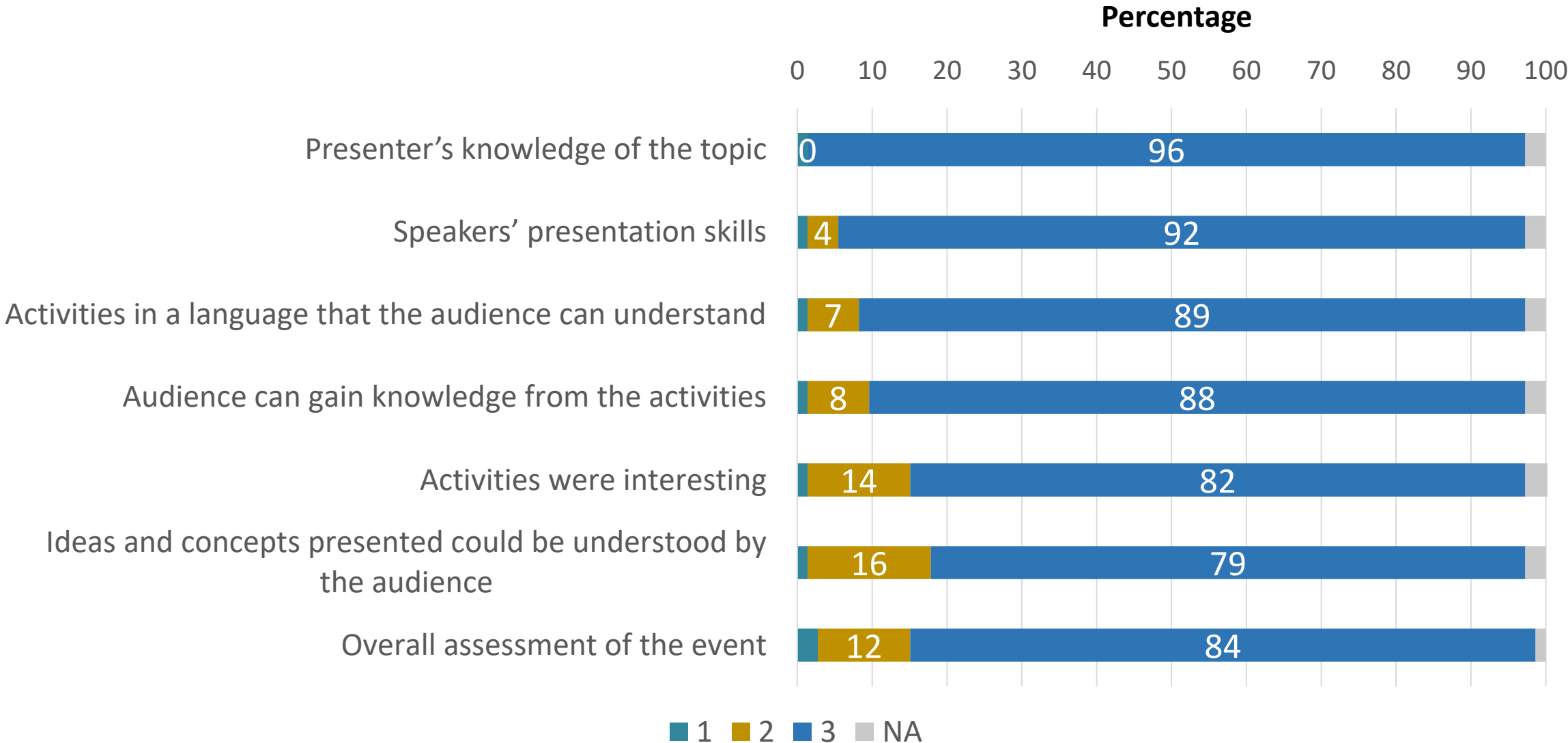
Webinars: Addressing NSW theme and objectives?



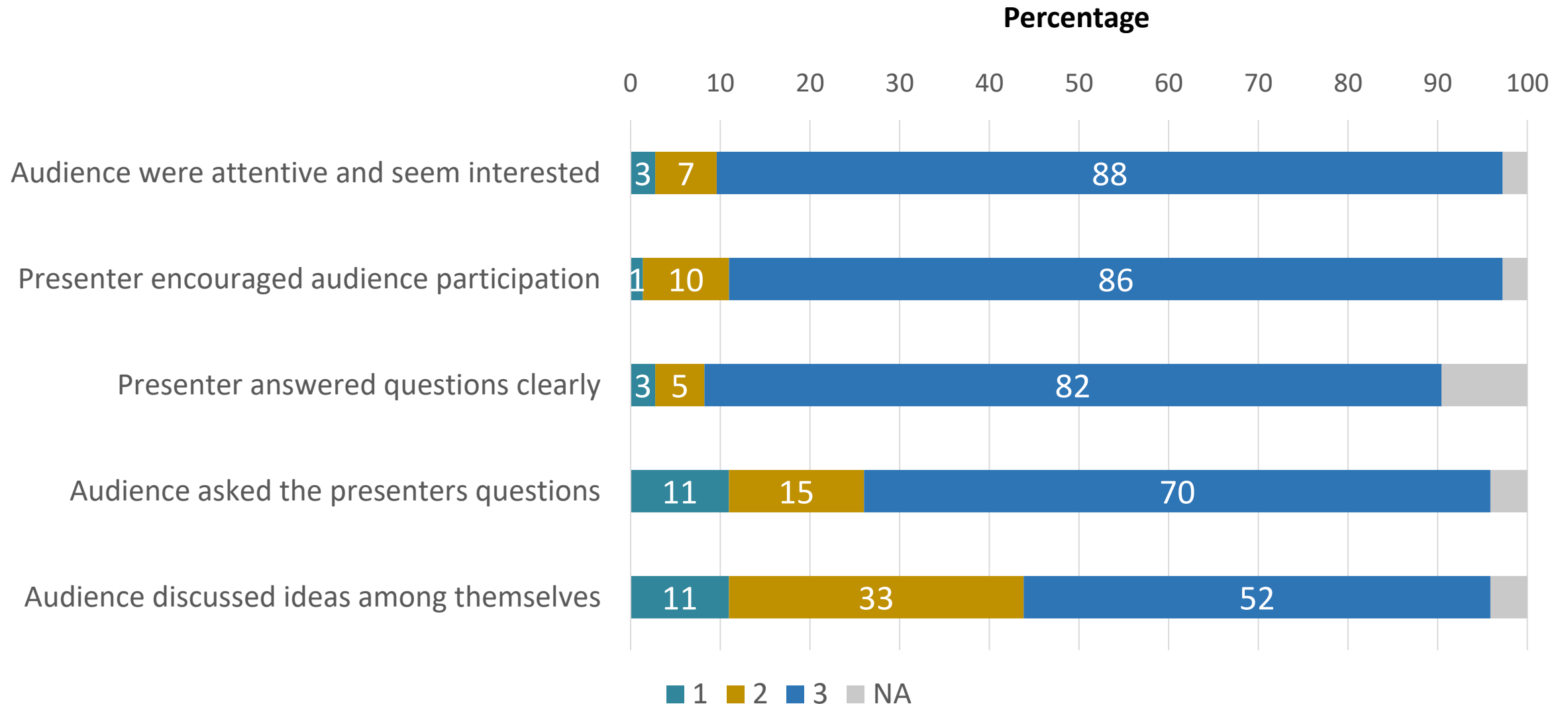
Observations of organisation at sites/schools



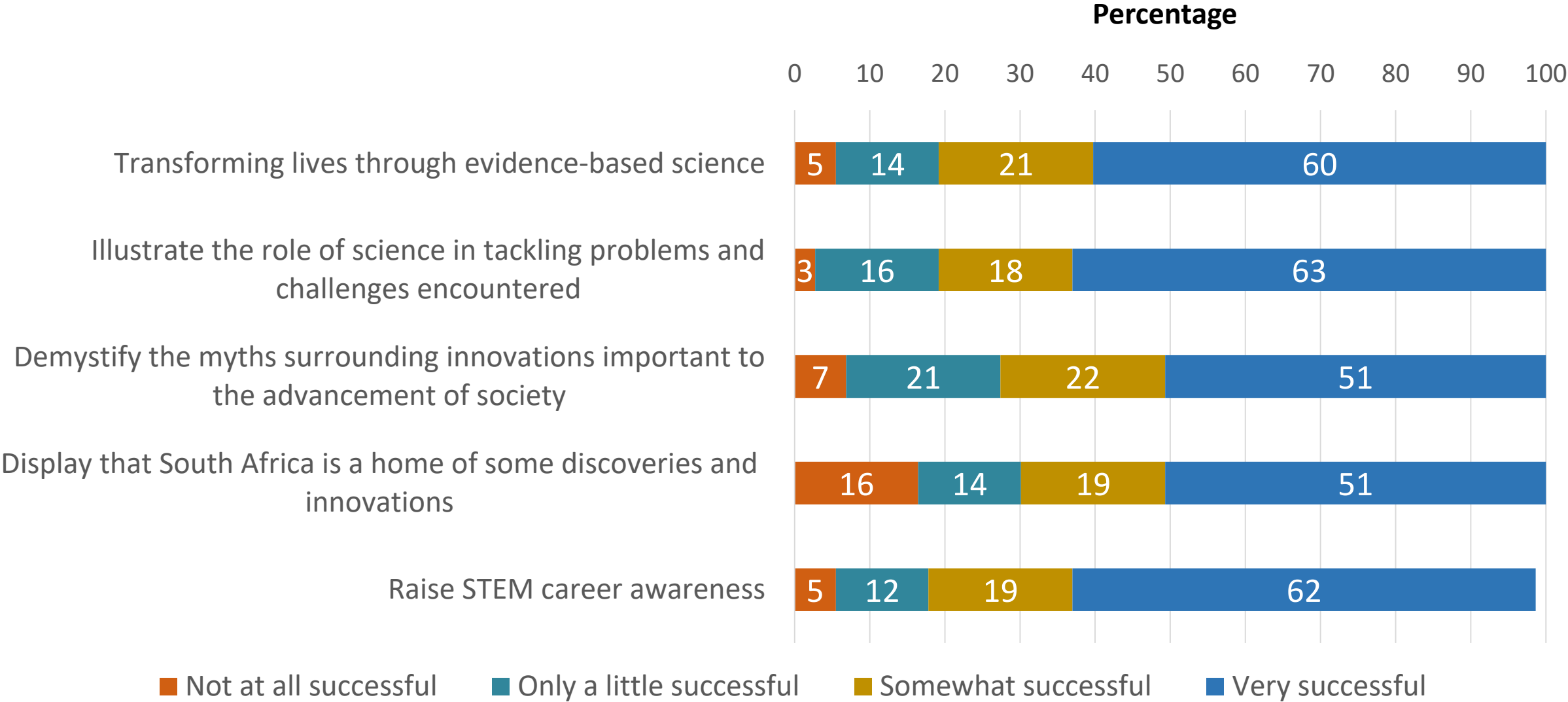
Observer ratings of site/school activities



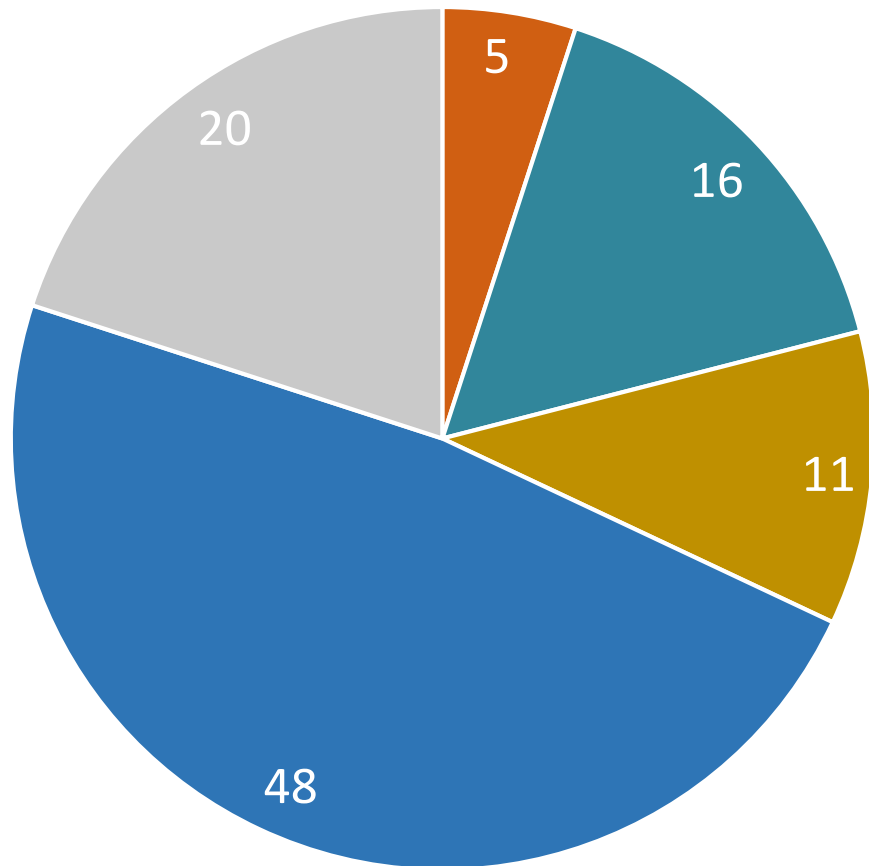
Observers' view of engagement at sites/schools



Observers' rating: NSW theme and objectives



Grantholders' prior participation

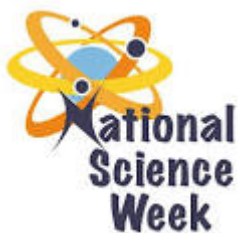


Percentage

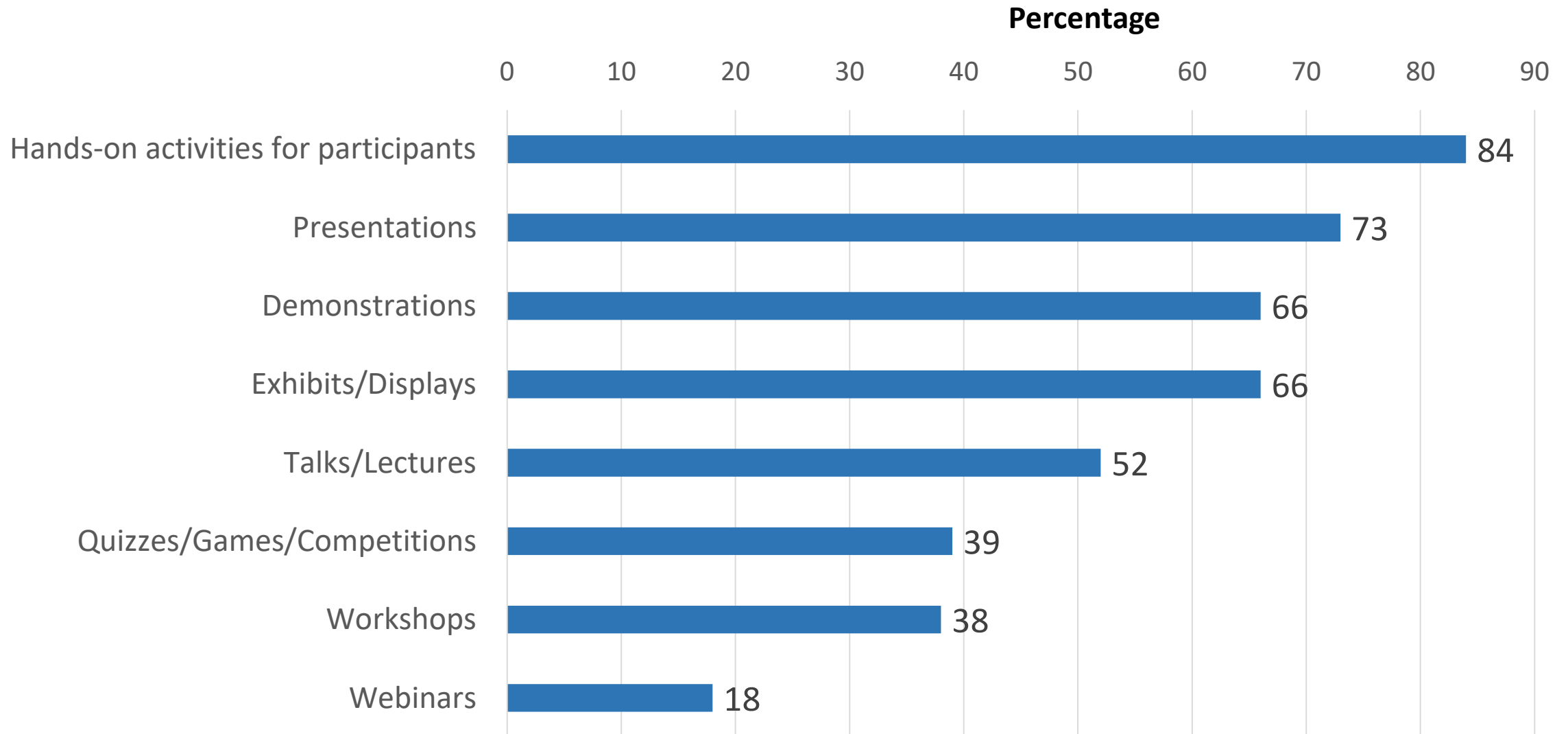
- Once
- 2 or 3 times
- 4 or 5 times
- More than 5 times
- This is the first time participating as a grantholder

48%

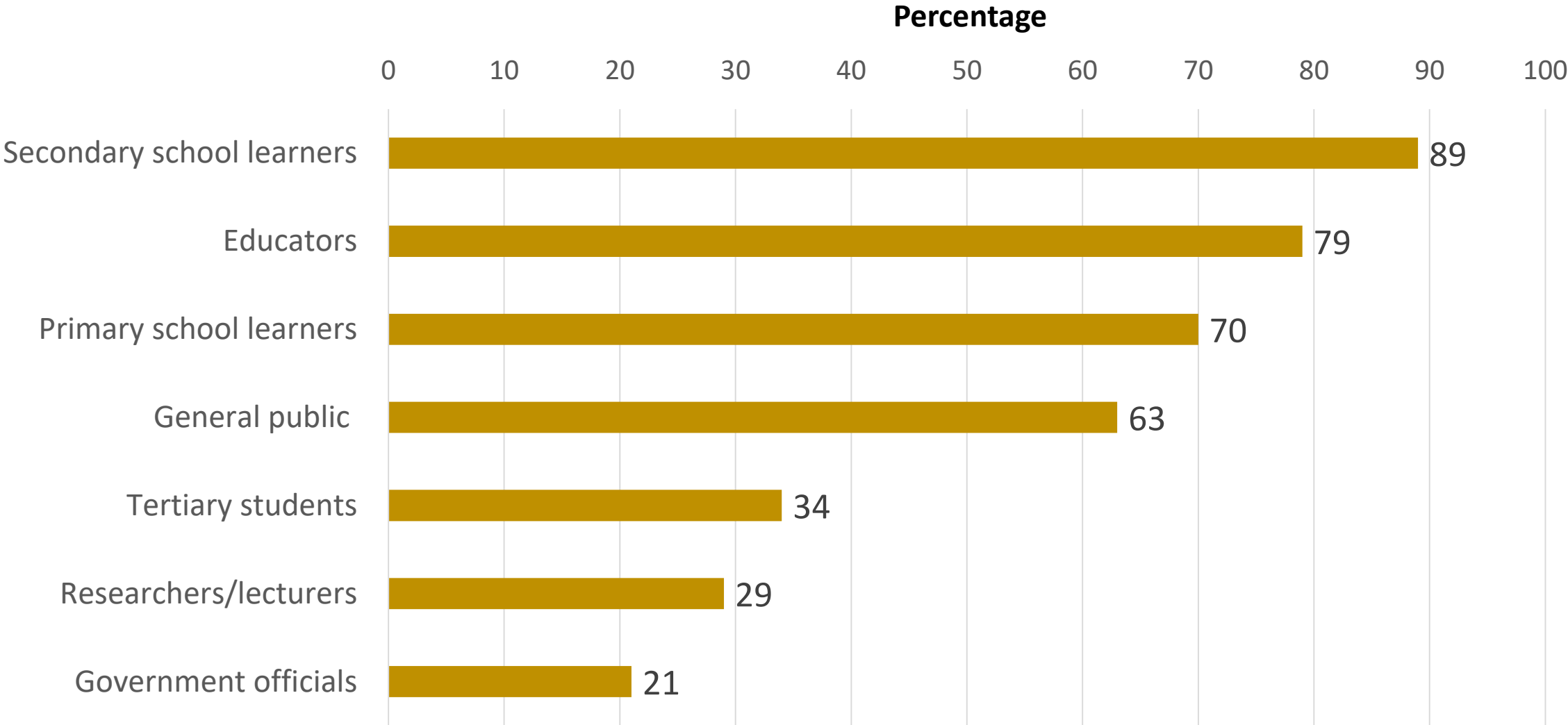
said that they or a representative from their organisation attended the NSW 2023 launch



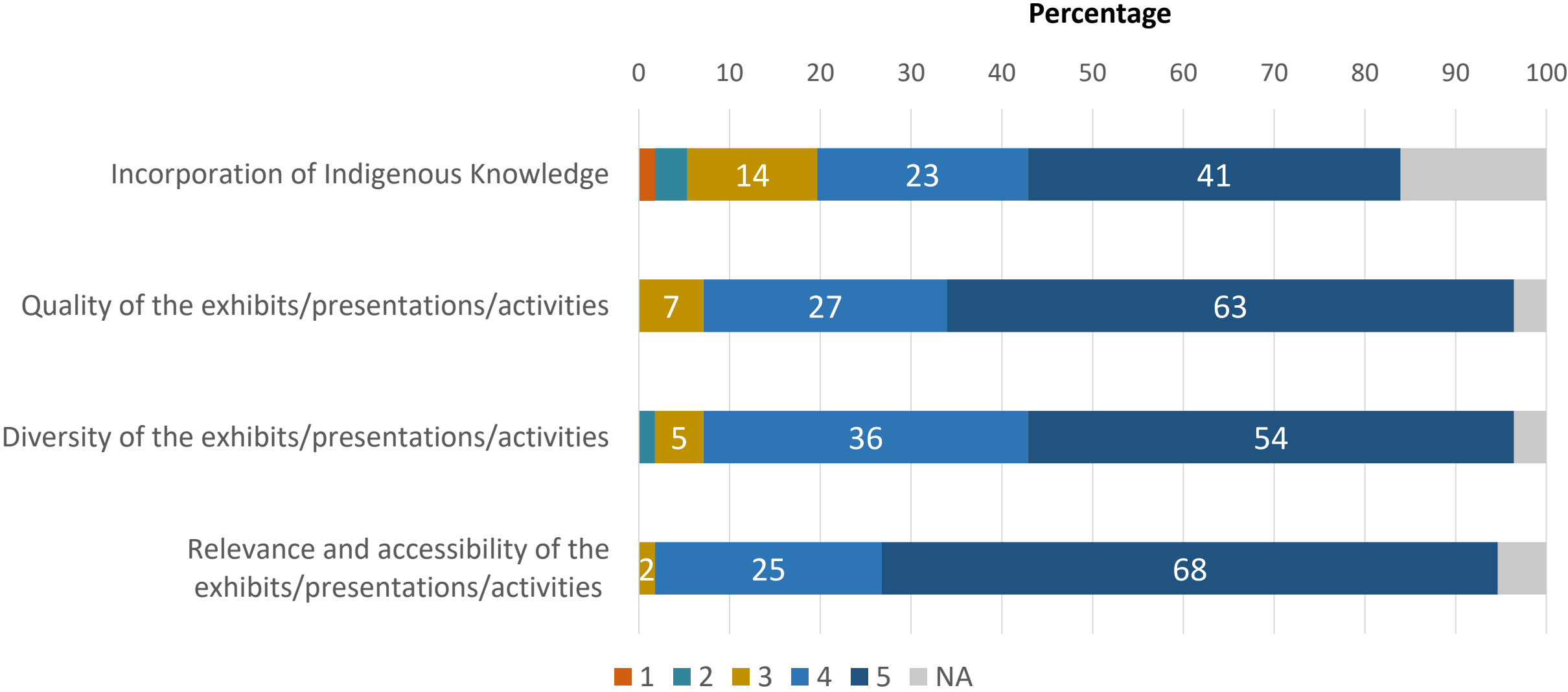
Grantholders' activities



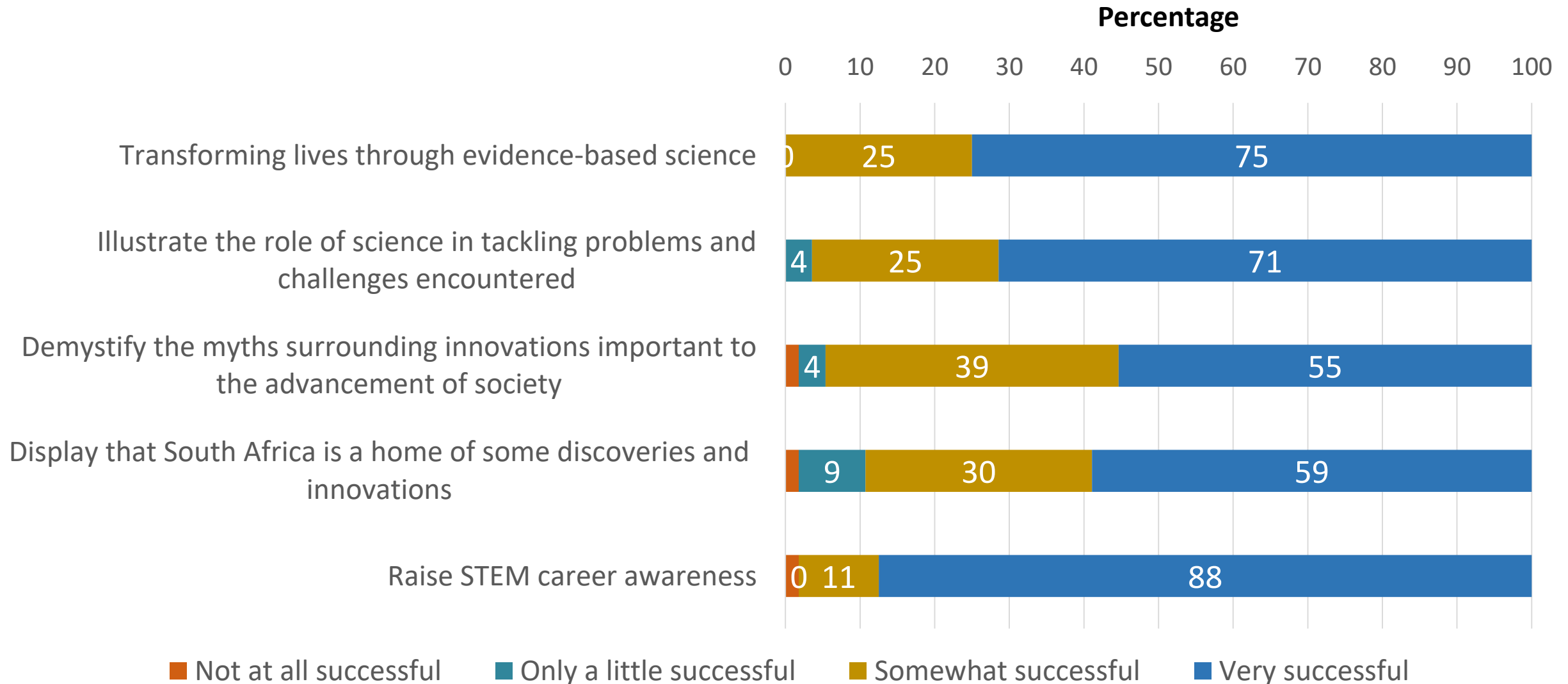
Grantholder target groups



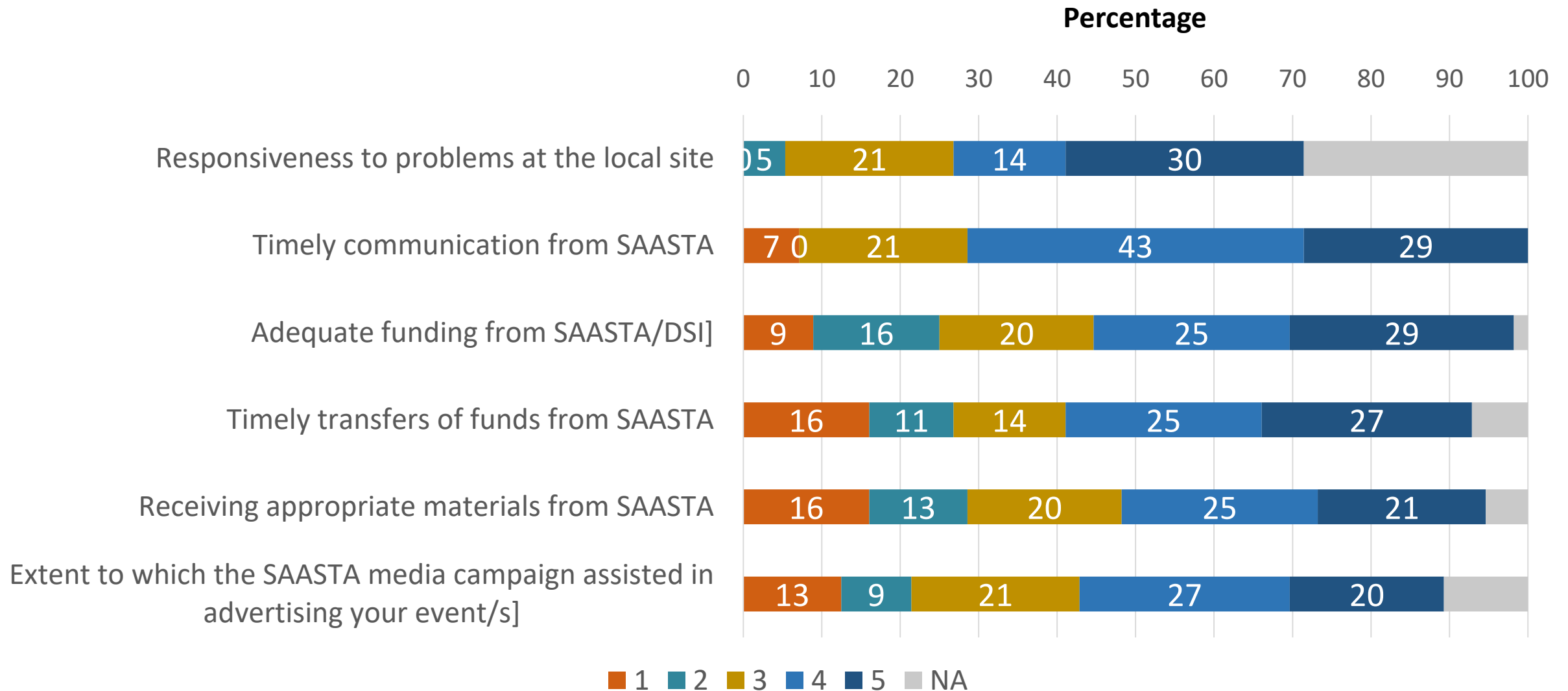
Grantholders' rating of activities



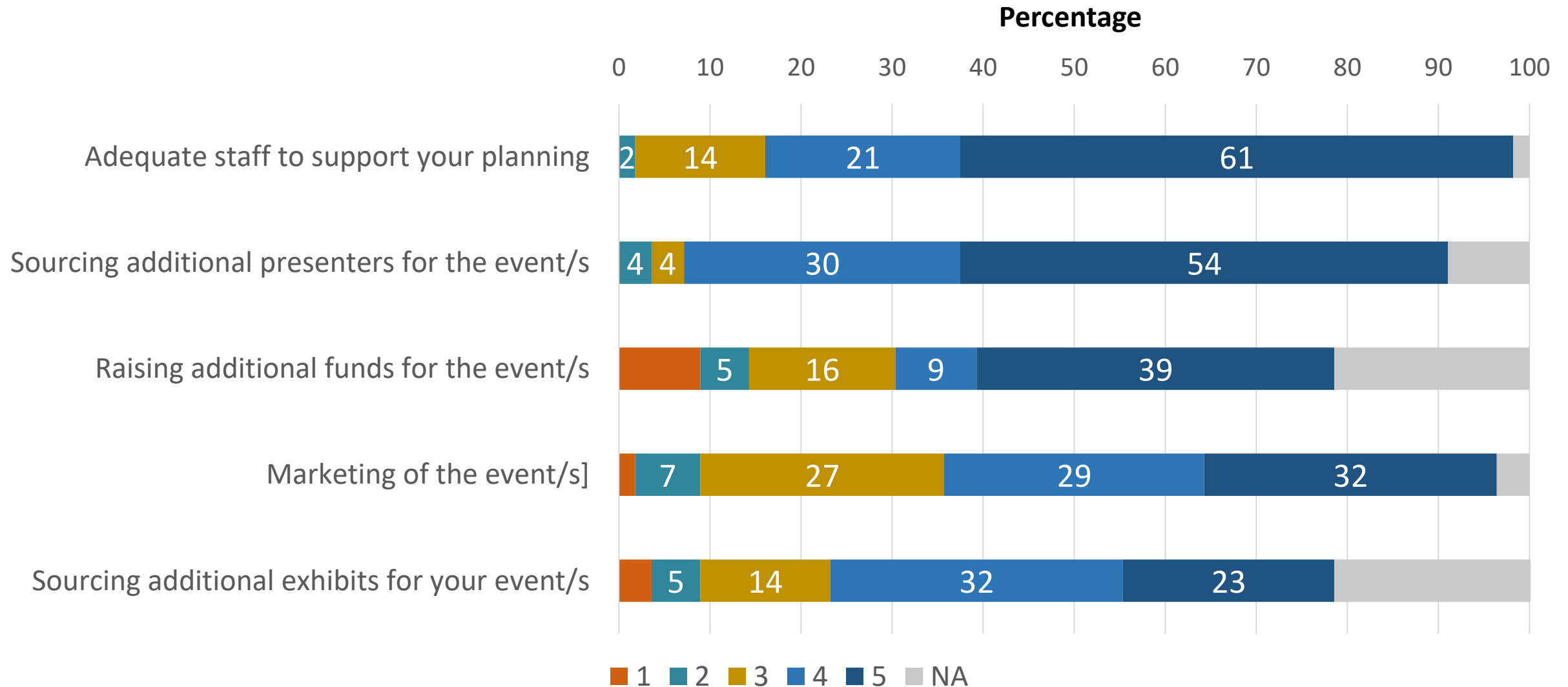
Grantholder activities: NSW theme and objectives?



NSW planning



Grantholders' planning



Next steps for NSW 2023

- Data collection
 - Grantholders' reports
 - Media analysis
 - Non-grantholders' surveys (in progress)
- Data analysis
- Writing of the 2023 NSW report



Talent Development Programme

TDP 2022

Baseline and follow-up learner surveys

Learner focus groups

June/July holiday school observation

Tutor surveys and interviews

Coordinator surveys and interviews

- TDP 2022 report was sent to DSI for comment
- Editing
- Submission after editing and internal approval

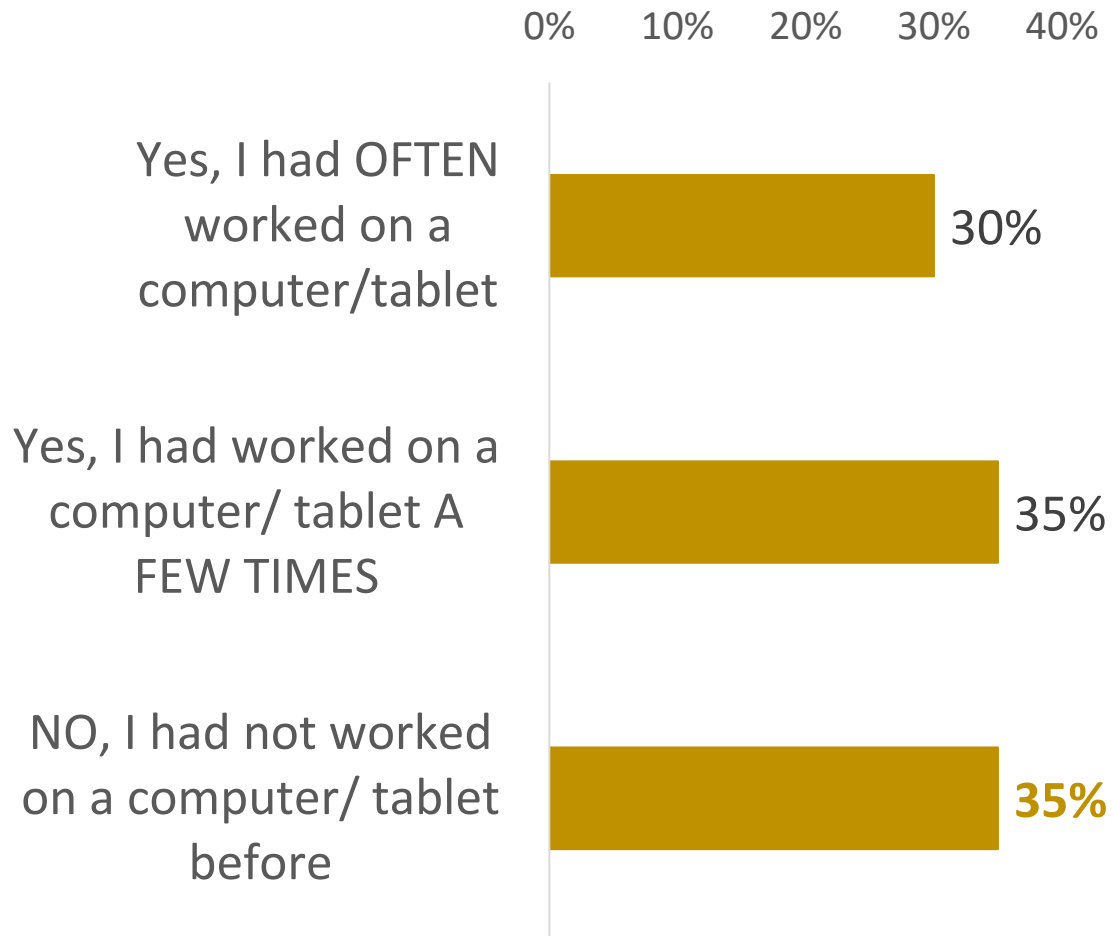
Attitudes and aspirations

- Attitudes
 - Enjoy mathematics and science
 - Place a high value on the subjects in relation to their everyday life, education and career opportunities
 - Have high confidence in their abilities
- High academic aspirations
 - Majority plan to complete at least a Master's degree
- Plan to study STEM-related fields

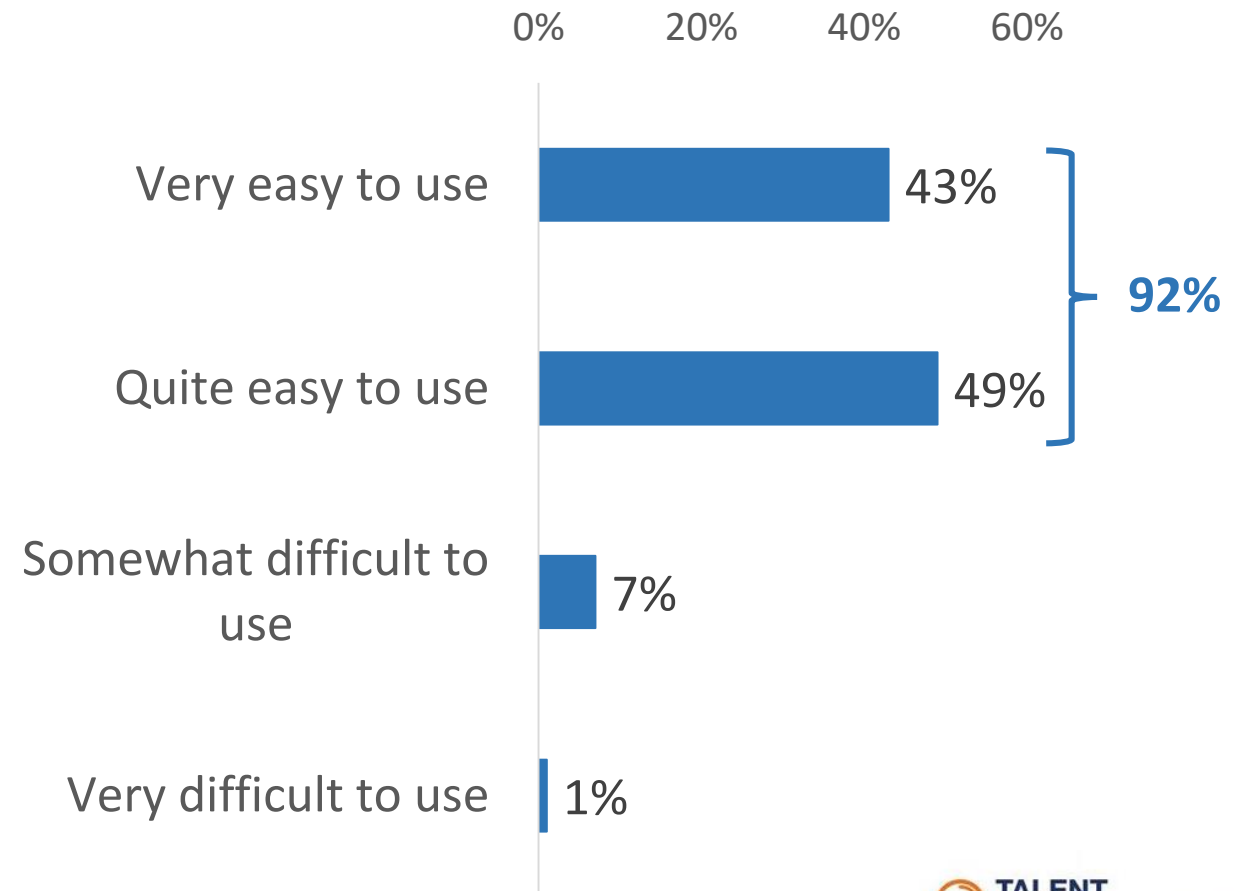


Online learning experience

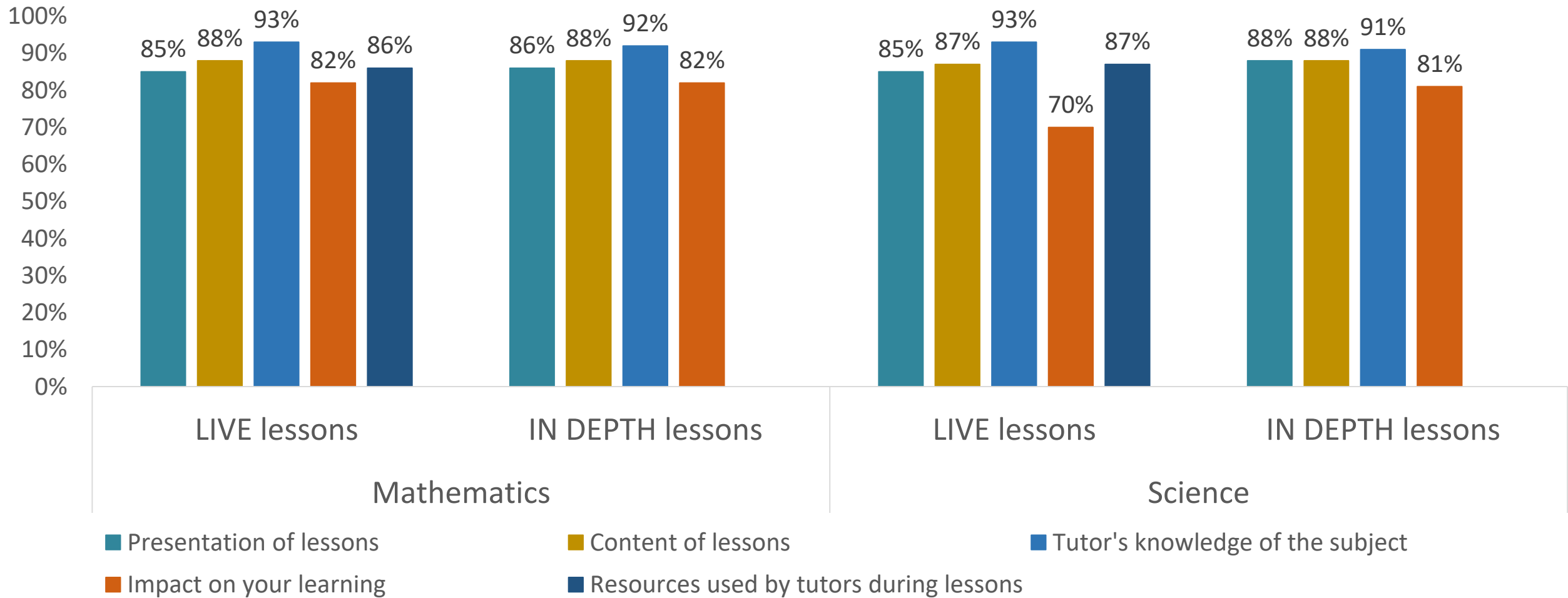
Prior online experience



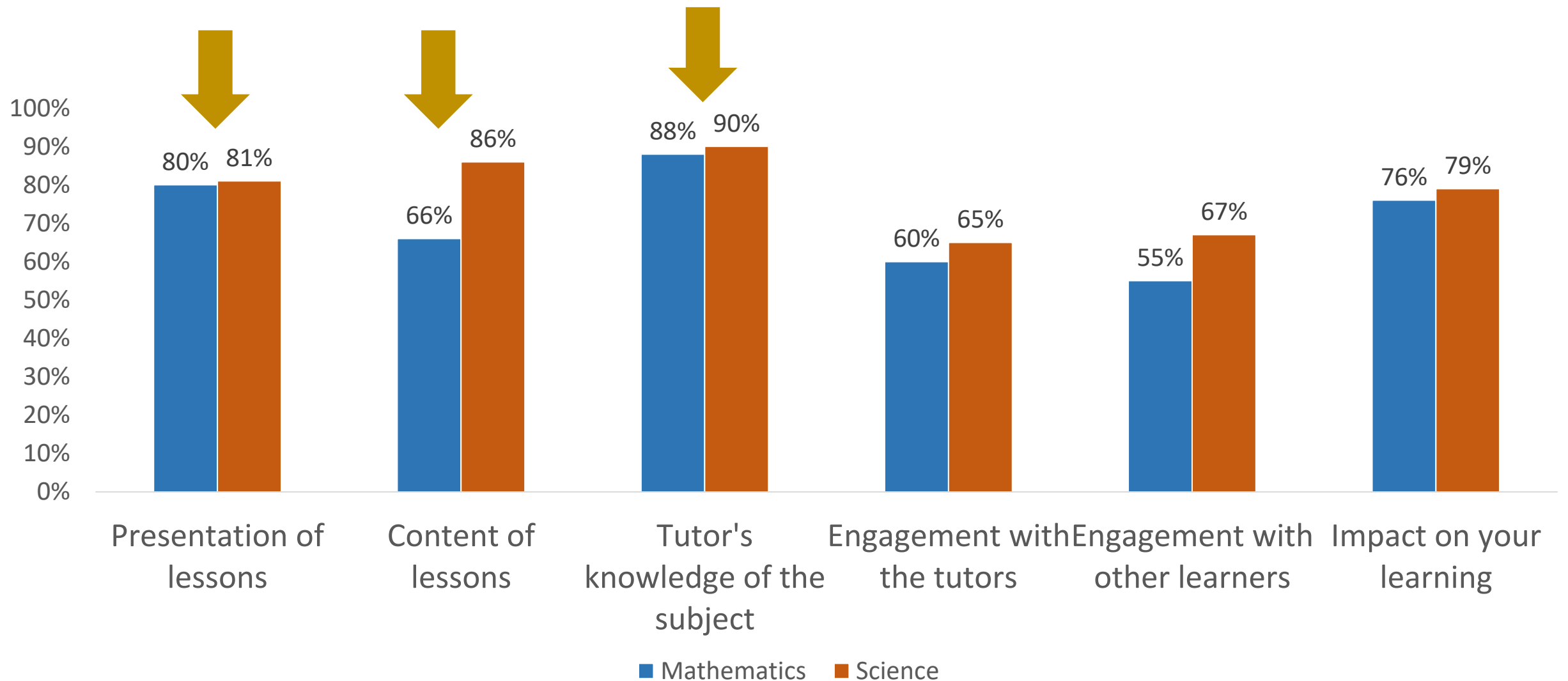
Use of smart classroom



Rating of lesson aspects

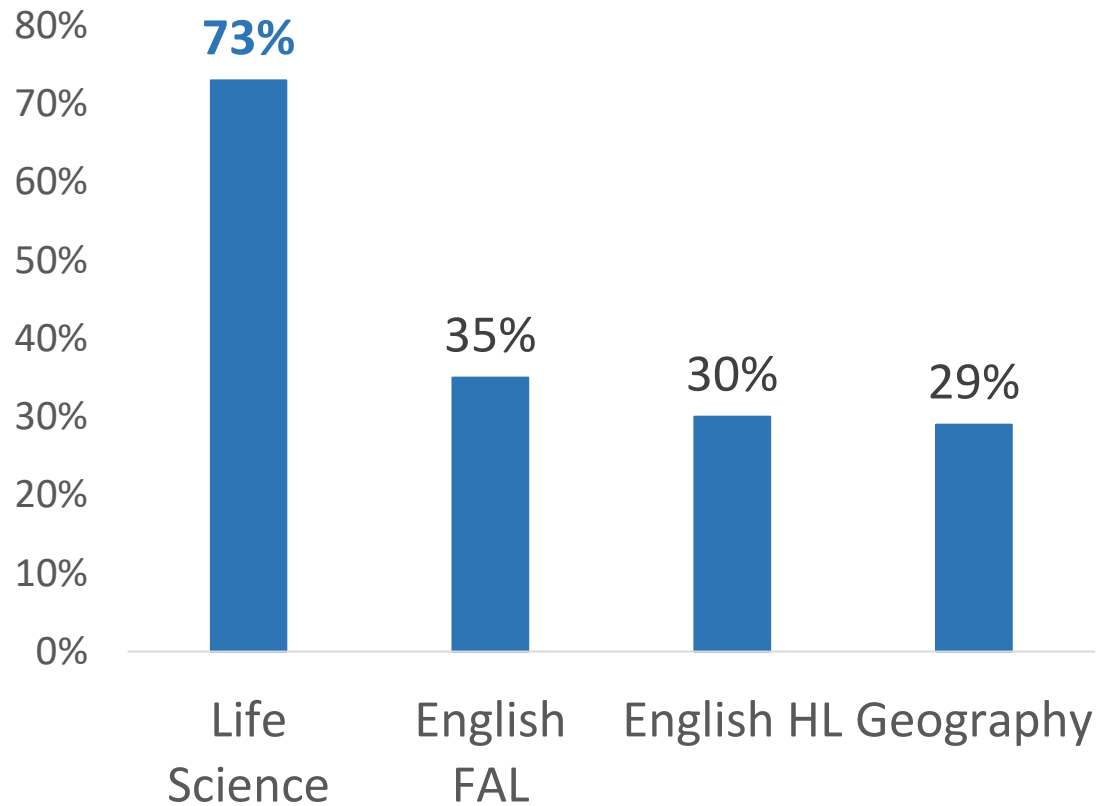


Views on provincial tutor sessions

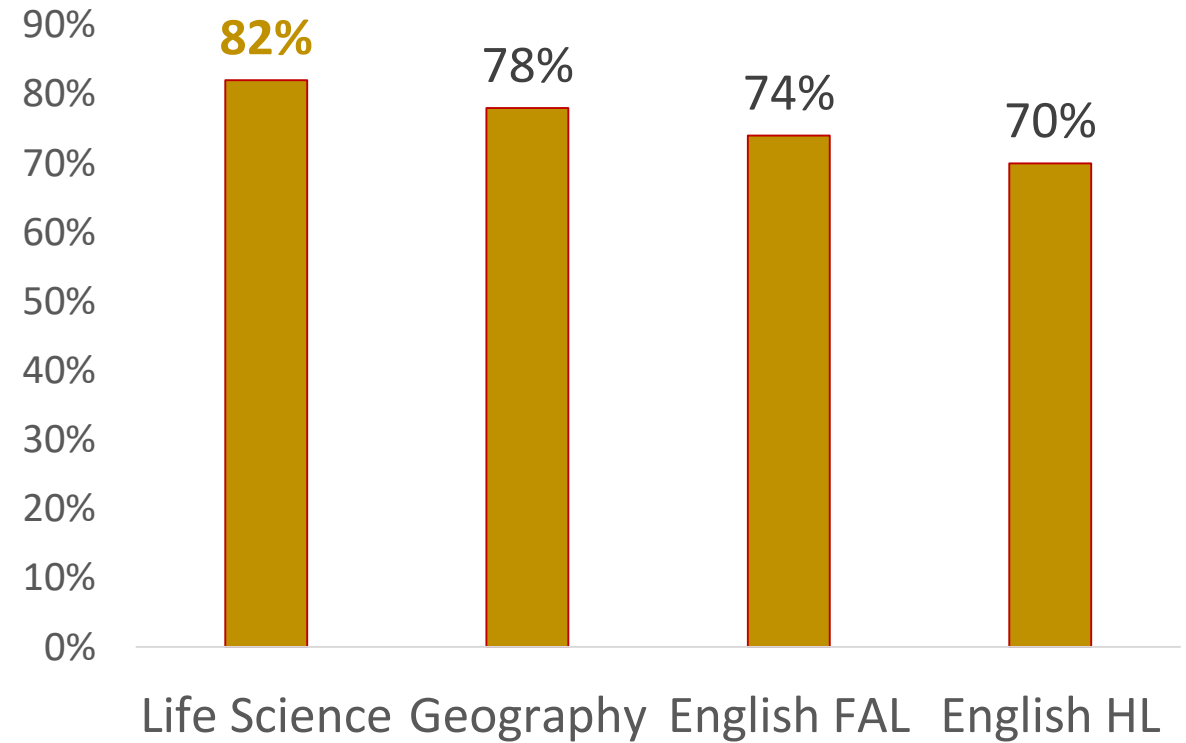


Supplementary lessons

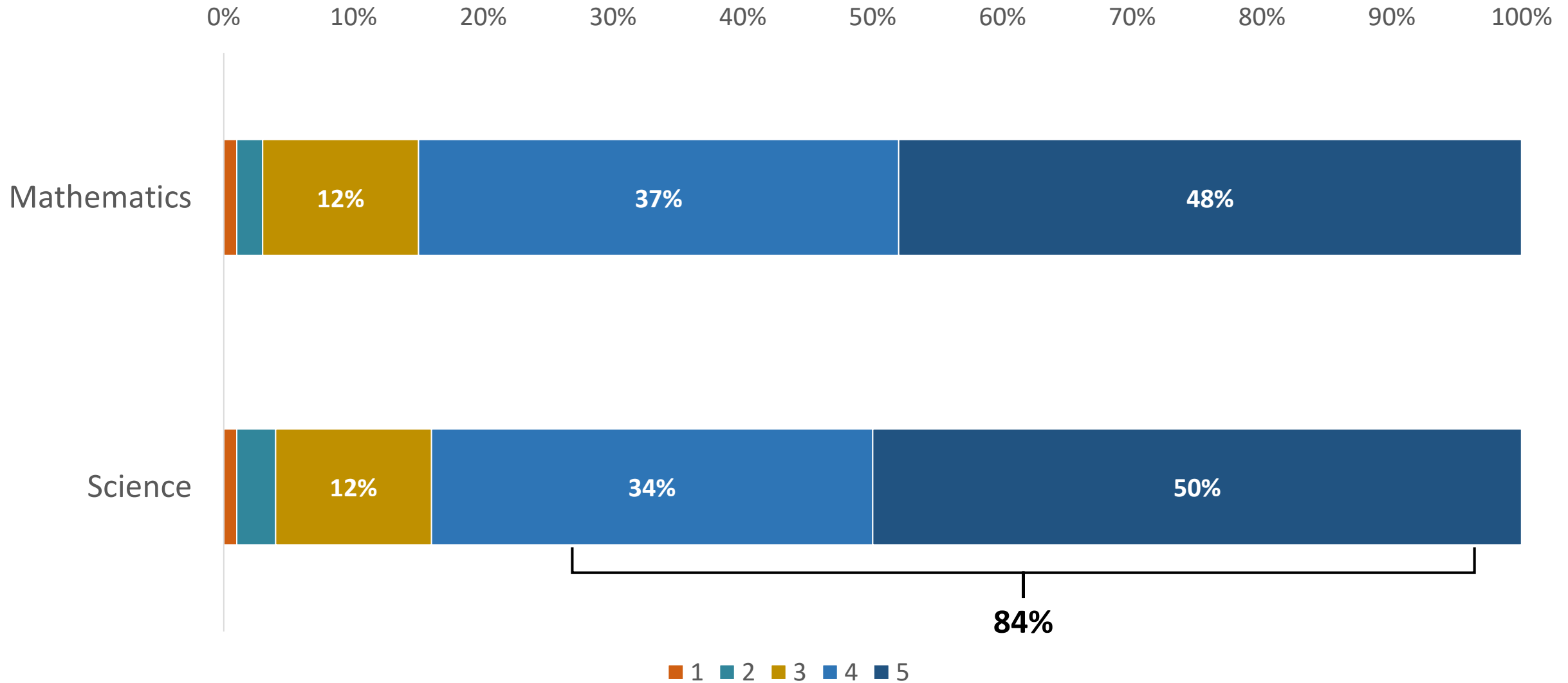
Accessed



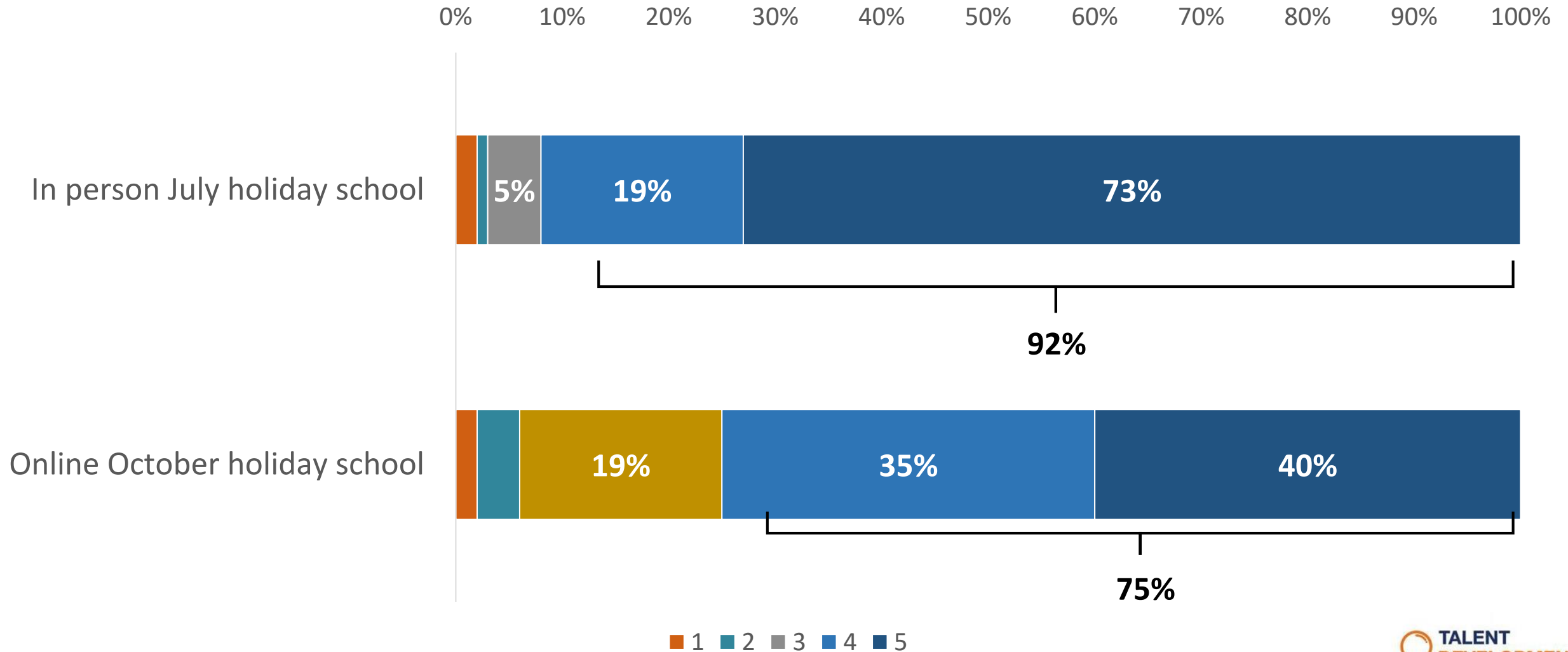
Rated as 4 or 5



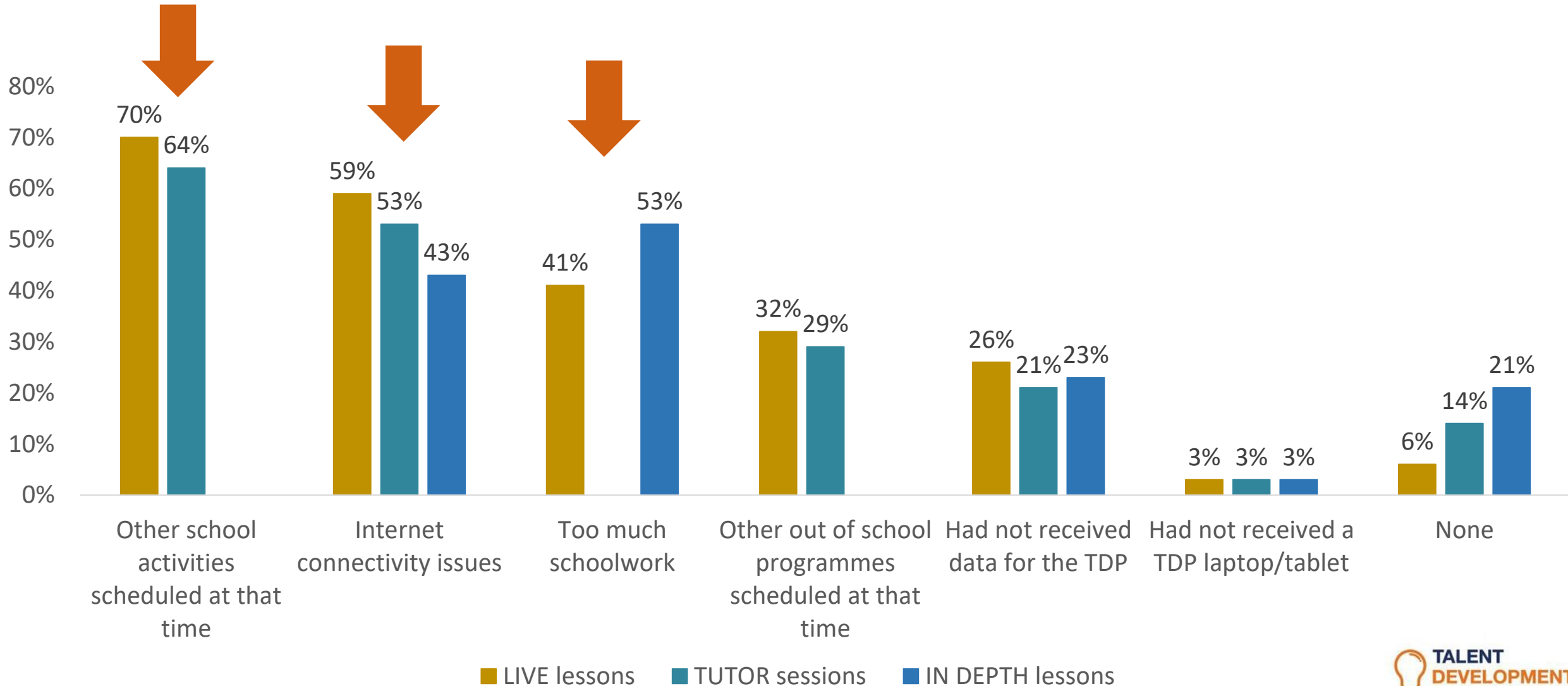
Improvement in knowledge and understanding



Rating of holiday schools



Barriers to attending/accessing lessons



Favourite part of the TDP

Help with
difficult topics

Treated with
respect and dignity

Exposure to
university life

Resources: tablet, data,
study material

Fun

Gaining knowledge

Learning from others

Sense of
community

Engaging with other
academically talented
learners

Learning topics not
taught at school

Accessing information
and sharing with
friends at school

Excellent
tutors/teachers

Challenging myself

Learning different
methods to solve problems

Meeting new
people

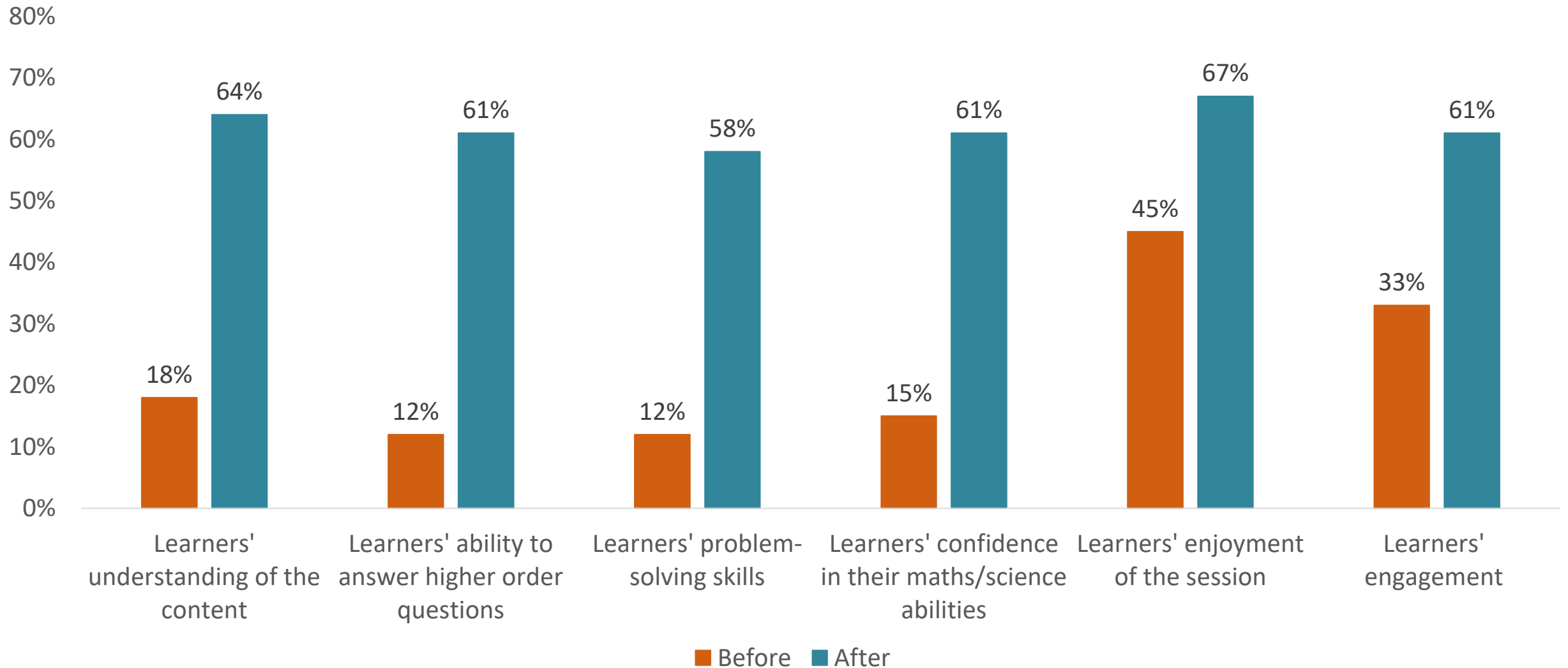
Being selected to
participate

Educational support

Advice and encouragement



Tutors' rating of aspects before and after



Challenges encountered by tutors

Connectivity challenges, sometimes due to loadshedding. Learners are therefore unable to attend all sessions'

Data not received on time
Learners running out of data before the end of the month

The devices are not writing-enabled
Rare cases of devices malfunctioning

Teaching virtually - technological challenges

Low learner attendance of midweek sessions

The TDP clashes with other school programmes, affecting attendance

Alignment with the ATP:

- Schools did not all follow the curriculum
- Certain topics were not taught at all schools
- Learners therefore did not have prior knowledge of some topics

Teaching learners from different backgrounds

Learners have different levels of understanding of concepts and their ability to answer questions. It is sometimes difficult to determine the level of questions to prepare and teach

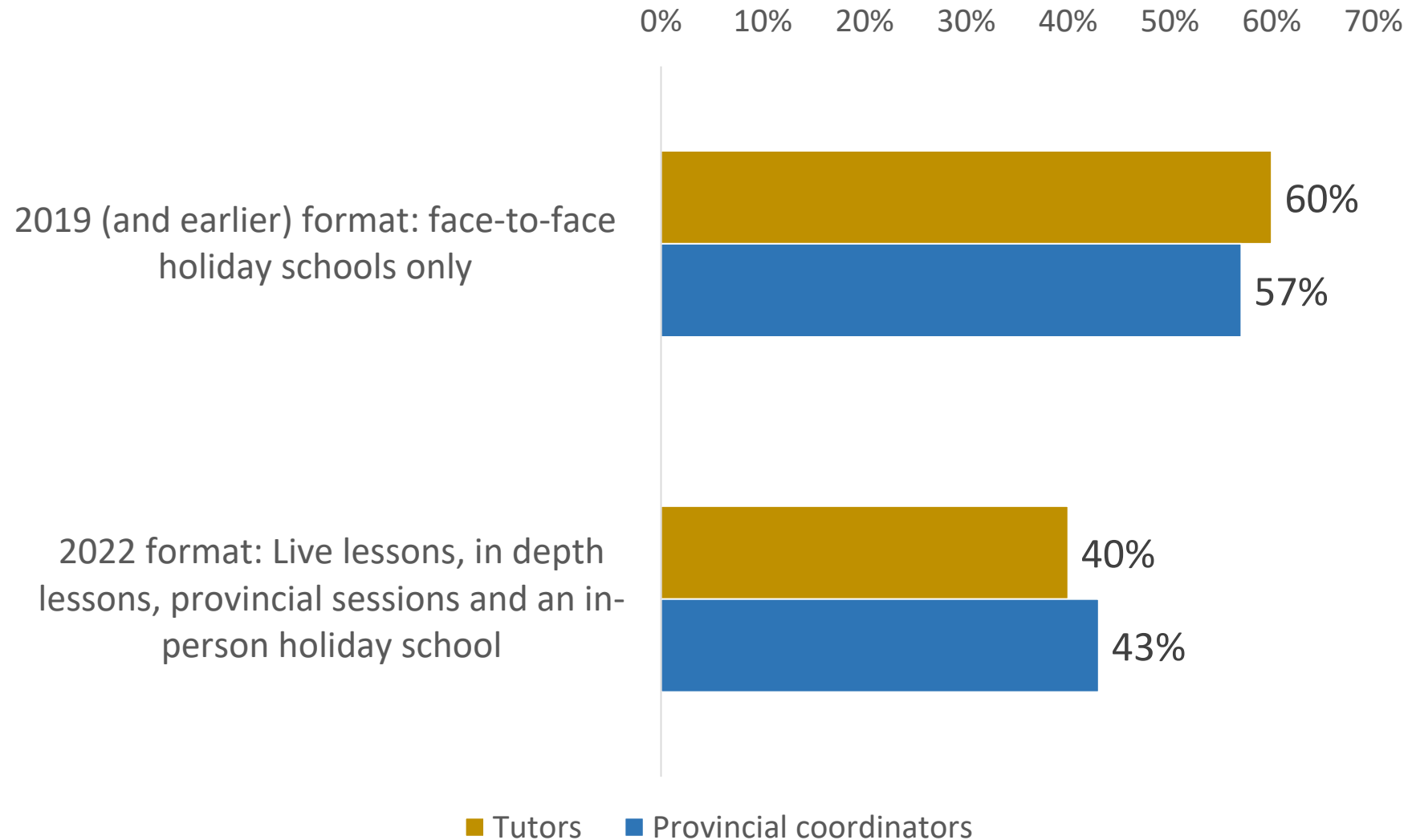
Many of the learners chosen for the programme do not fit the profile - they struggle with basic concepts, are unable to apply knowledge in unfamiliar scenarios, and are not ready for higher-order questions yet

During online sessions, some learners are very active, while some do not engage

Online you cannot see when learners are struggling

Limited face-to-face interactions

Preferred TDP format



Involvement of 4 years or more, since at least 2019

- 45% of tutors
- All provincial coordinators (7)

Recommendations

- TDP format
 - More face-to-face interaction
- Communication
 - Earlier communication with learners and parents
 - WhatsApp groups with tutors
- Learner selection criteria
 - Consistent
 - Develop with provincial coordinators and tutors
 - Stricter requirements/group learners by ability
- Flexibility in scheduling and lesson formats
 - Sessions in more than 1 slot/ recording live lessons
 - More group work



Recommendations

- Monitor and encourage participation
 - Monitor participation
 - Tasks or questions marked by tutors
- TDP content
 - Content: Basic concepts and topics that learners struggle with/not be covered at schools
 - Subjects: Broaden scope of subjects or add extra supplementary subjects
 - Career guidance: More extensive approach
- Learner support
 - Consider learners' backgrounds
 - Support with online learning
 - Provision of resources
 - Sharing of experiences by learners

Recommendations

- Tutor support
 - Training on effective online teaching and resource use
 - Improved resources
 - More engagement
- Technical support
 - Ongoing and timeous support
 - Timeous provision of data
 - Data providers based on connectivity strength
- Stakeholder engagement
 - Key stakeholder meetings at end of each term

TDP 2022 Post-School Cohorts

- Revision of post-school instruments
 - 2022 cohort: 1 year post-school in 2022
 - 2021 cohort: 2 year post-school in 2023
 - 2020 cohort: 2 years post-school in 2022
- Service provider appointed to conduct telephonic interviews/online surveys
- Data collection for TDP post-school cohorts
 - November-December

What were they doing in 2022?

- Studying (University/College)
- Working
- Neither studying nor working

Impact of Covid on activities

What are they doing in 2023?

TDP post-school cohorts

	2020 Cohort (2022)	2021 Cohort (2022 & 2023)	2022 Cohort (2023)
Online surveys	127	139	132
Telephonic interviews	27	17	23
Completed	154	156	155
Response rate	42%	43%	45%