

Embedding digital design & fabrication support
within **Studio tutorials** in BA Interior and Spatial Design

My role and current technical support practices

Teaching and Learning **Specialist Technician in Digital Design and Fabrication**

- Digital design and fabrication **deliveries embedded in curriculum**
- Optional **refresher sessions outside the curriculum**
- One-to-one **bookable technical tutorials**

BA.ID

BA.ISD

MA.ISD

BA.PFD

MA.DM

GradDipl.ID

~2000 students

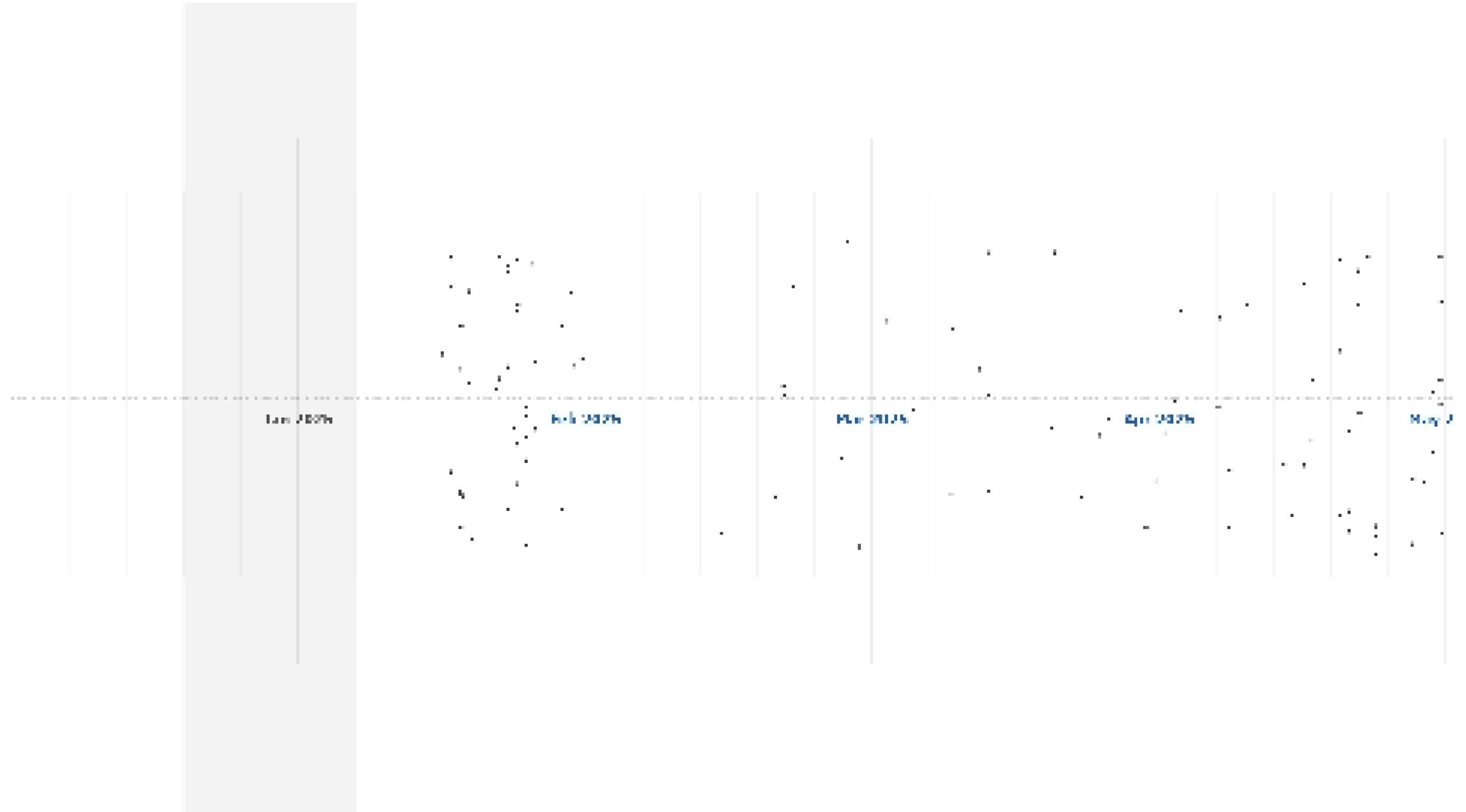
Current technical support practices - Barriers in access

An ethical response to **unequal access to technical support**

- Optional support **does not always reach students who need it most**
- Asking for extra help requires confidence, time and flexibility
- **Extra-curricular models can reinforce inequality of access**
- Barriers include confidence, **time, paid work, cost and commuting**
- Embedding support within studio reduces these barriers

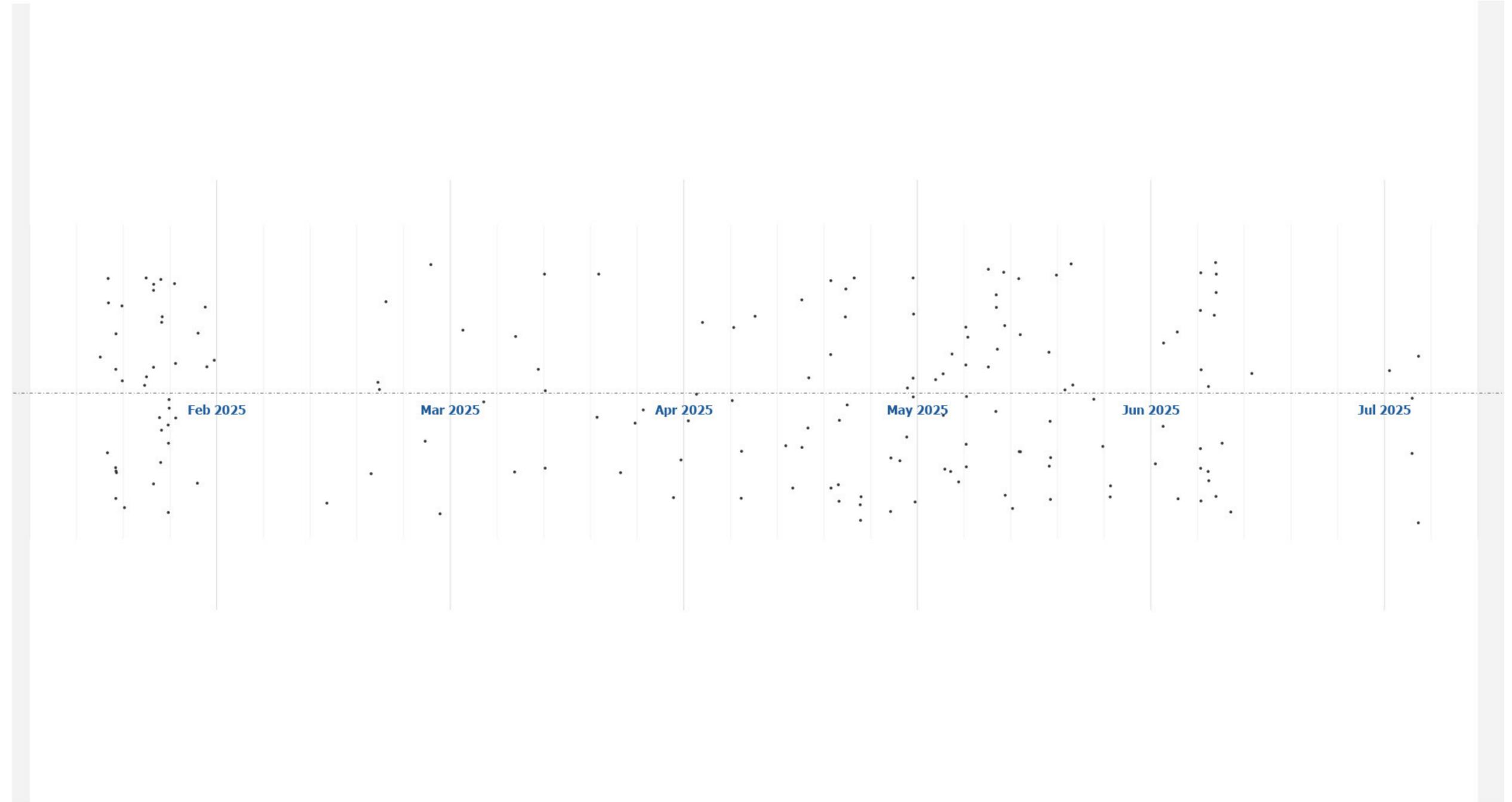
Mapping current practice 1:1 booking data

- . One year of booking data
Jan 25 to January 26
- . Exported from Microsoft Bookings and analysed in Excel
- . Each point is a booking
- . Includes all members of the technical team
- . Used to identify patterns



Mapping current practice 1:1 booking data

- . Data not filtered by course
- . Does not account for no-shows or ad hoc support
- . Mostly addresses isolated technical issues (limited impact on deeper project development)
- . A small number of repeat users could account for a large share of bookings



Mapping current practice 1:1 booking data

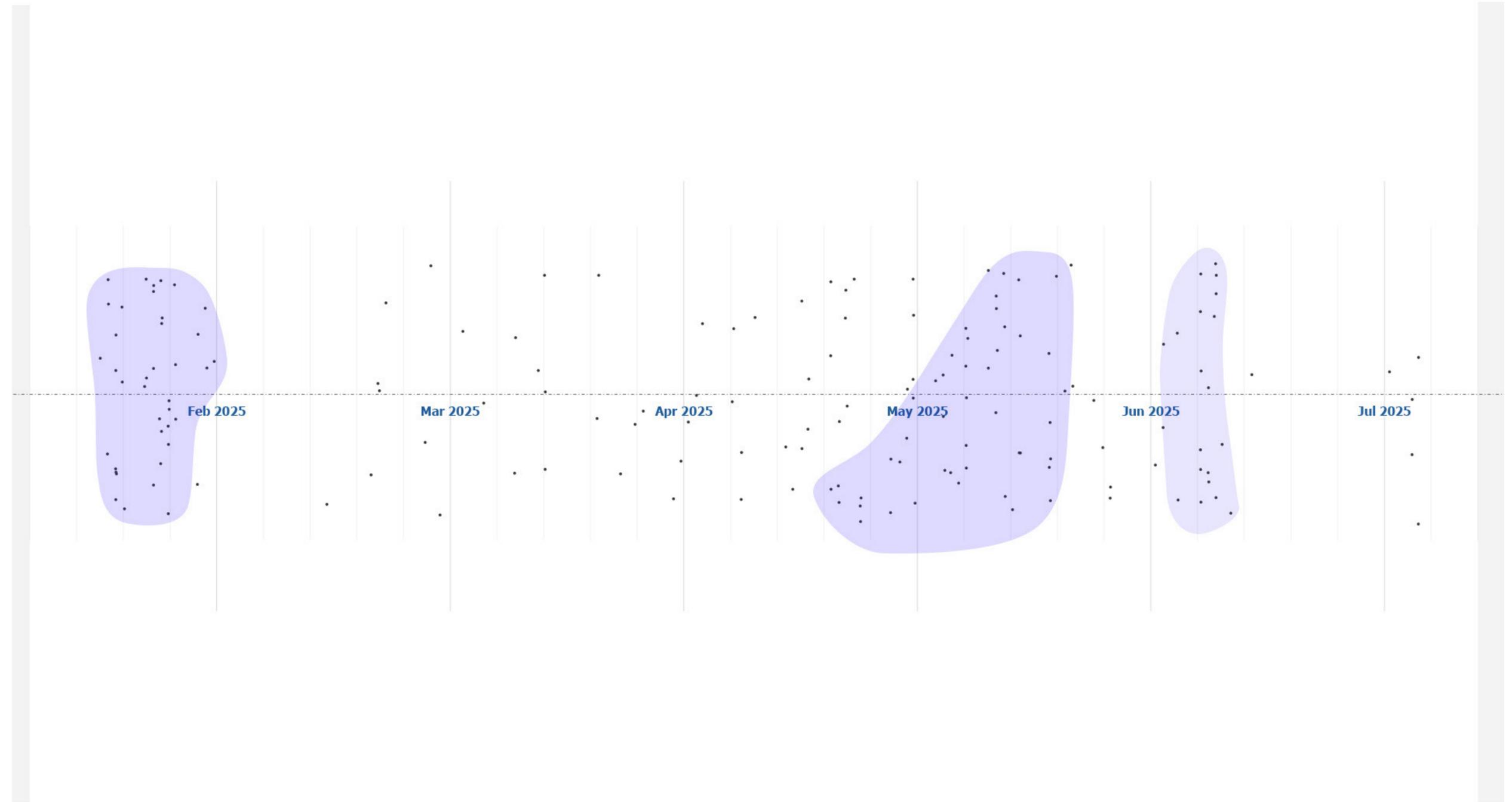
- Interpreting the data

- Clusters around January–February and May–June 25

- Mostly ahead of submissions

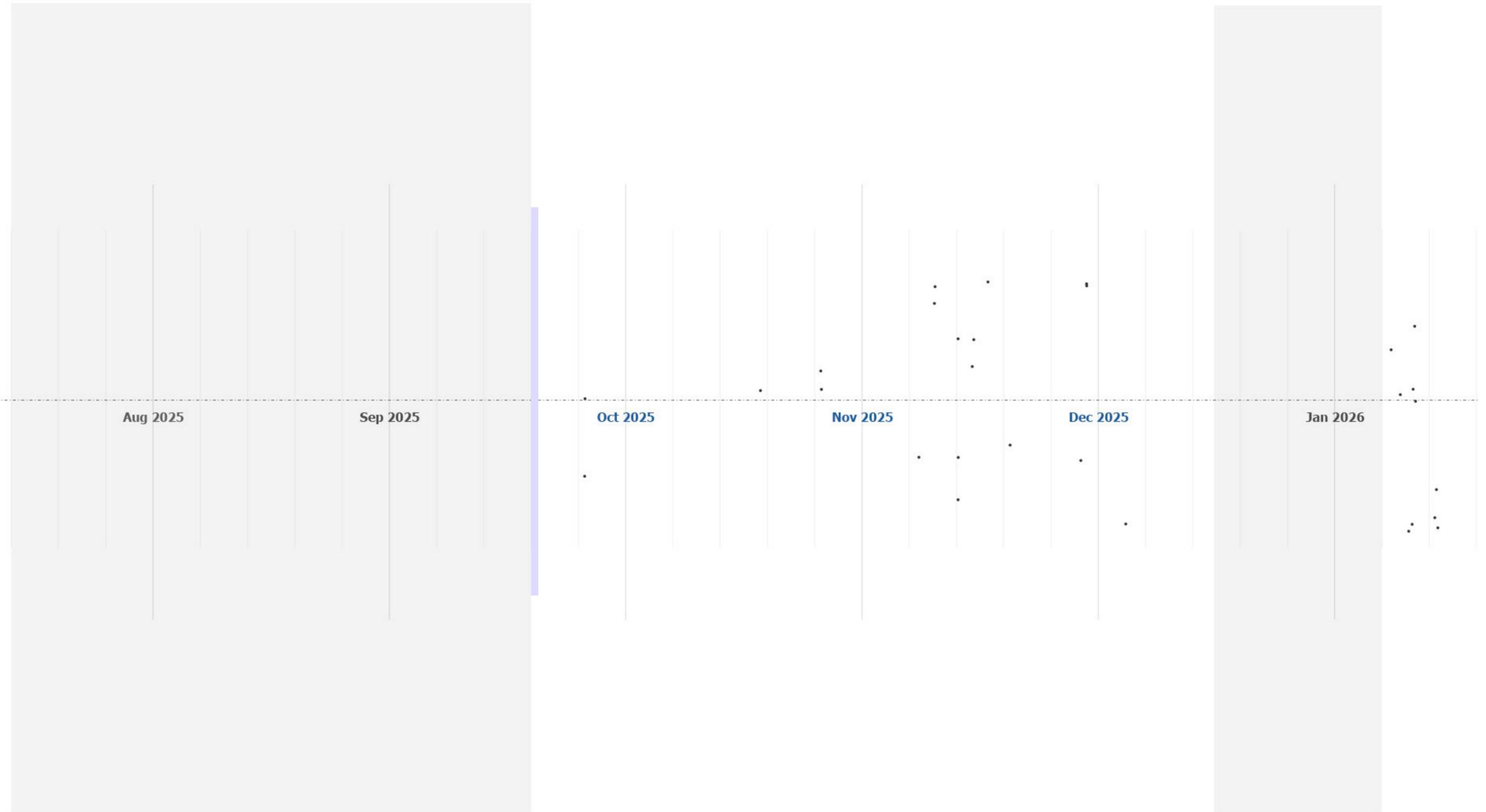
- Suggests it is used to address isolated technical issues

- Limited impact on deeper project development



Mapping current practice 1:1 booking data

- Strikingly low number of bookings at the start of term
- This occurs despite significant efforts to improve visibility and access
- This suggests that lack of awareness alone does not explain low uptake
- Other factors may be limiting students' engagement with optional technical support



Patterns of use in 1:1 technical support bookings



- 51 students booked 1 time
- 18 students booked 2 times
- 7 students booked 3 times
- 5 students booked 4 times
- 3 students booked 5 times
- 1 student booked 6 times
- 4 students booked 7 times
- 1 student booked 8 times
- 1 student booked 10 times

ARP focus: tutor perspectives

Current practices and gaps in technical teaching

- Tutor survey as the main ARP method
- Structured around three axis:
 - 1-Mapping tutor expertise
 - 2- Understanding the impact of technical skills on design development
 - 3- Reflecting on time management (at the scale of tutorials, throughout the year, accross years)

13 tutors in Y1 & Y2 BAISD

10 responded

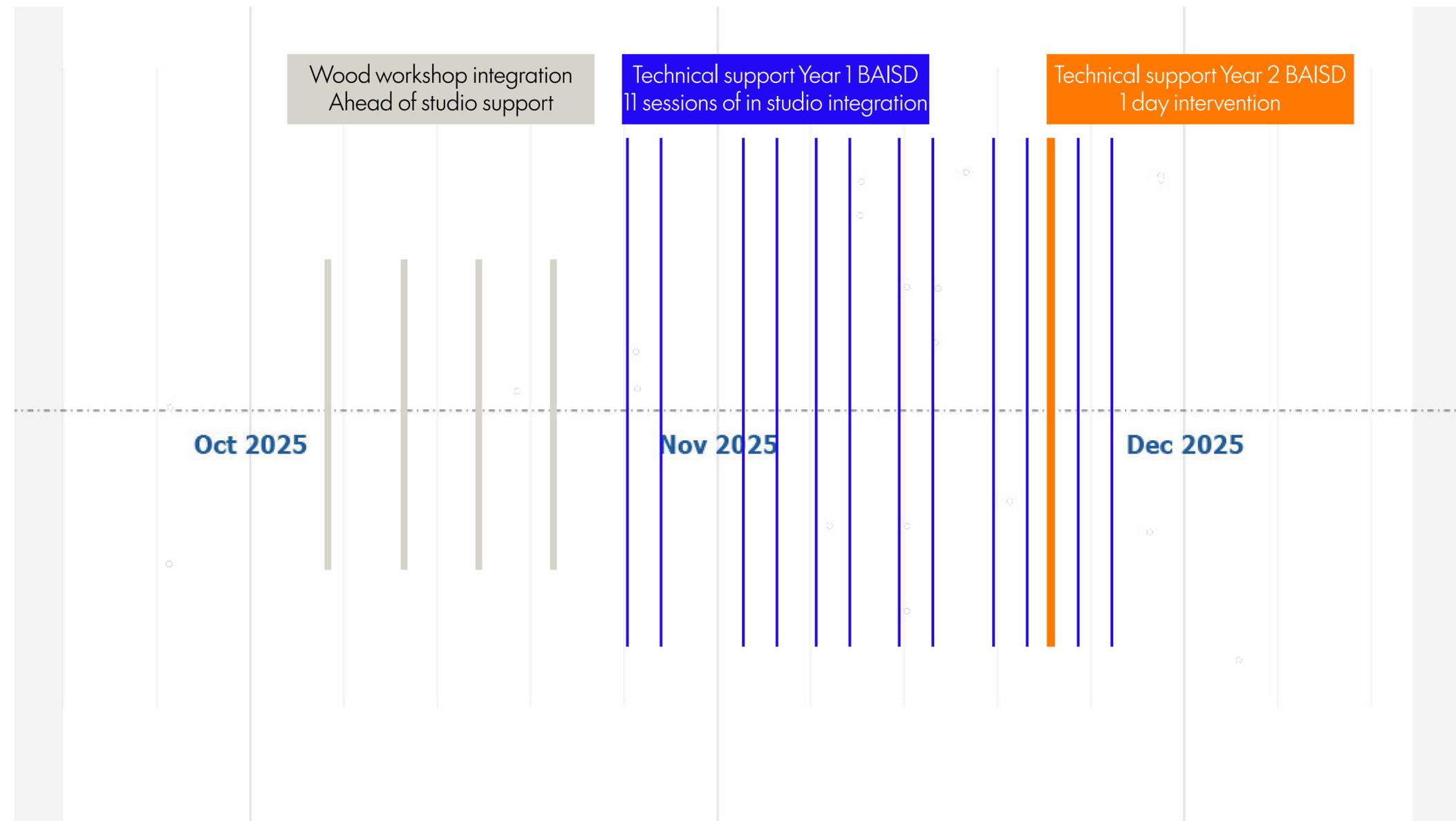
5 Year 1

4 Year 2

1 both years

Testing an embedded technical support model

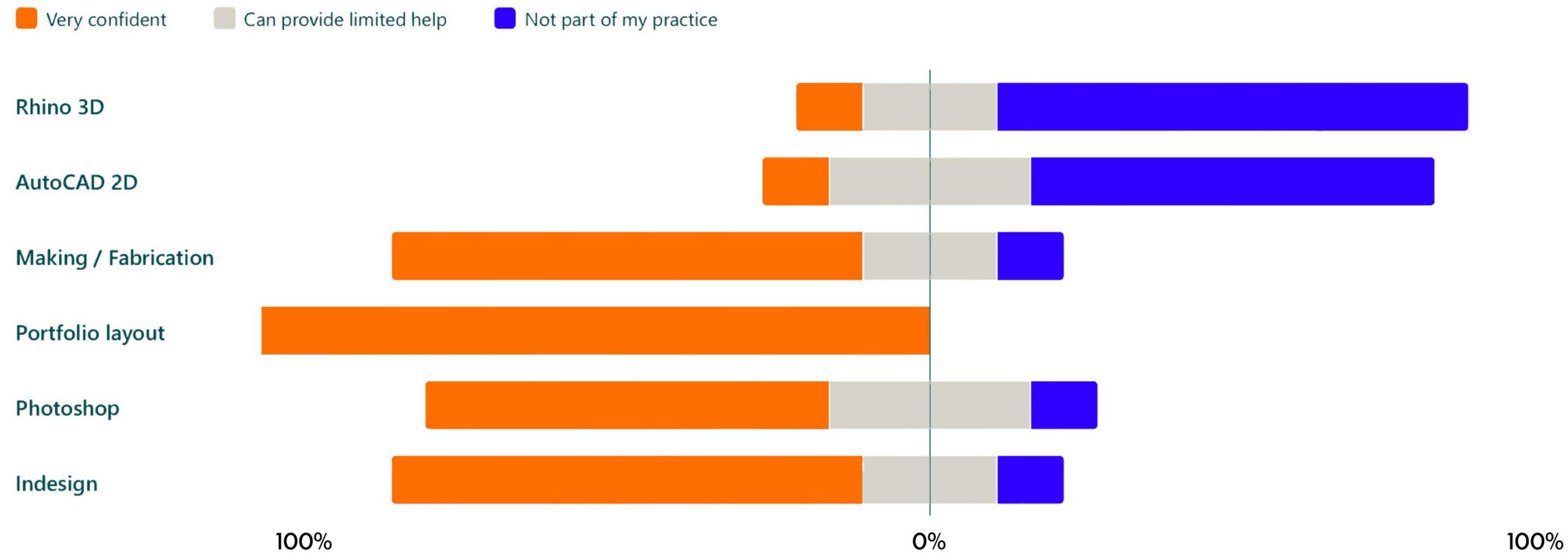
Training and progressive integration across BAISD Year 1, extending to Year 2



- Preparatory immersion: 4 days embedded in the wood workshop to upskill and align practice
- **Year 1:** sustained, embedded integration across a full unit targeted at fabrication
- **Year 2:** targeted intervention within studio time on digital support ahead of submission
- Progressive approach aligned with students' technical development

Mapping tutor expertise

How confident do you feel supporting students in the following areas?



- Large majority of tutors are **not confident supporting students in Rhino:** **70–90%** reporting low to no confidence

- Similar** findings for 2D CAD drawing in **AutoCAD**.

- Only **1** respondent felt confident in each software.

- Tutors tend to **share confidence in other areas**.

- All felt able to support portfolio layout, and most were confident with fabrication, graphic tools such as Photoshop and InDesign.

- This reveals an **uneven support landscape**, where some forms of help are widely available while others depend on which tutor a student happens to have.

Understanding the impact of technical skills on design development

For 100% of respondents

Students' levels of technical or digital skills make it difficult to focus on design development during tutorials - 80% estimate this is often the case

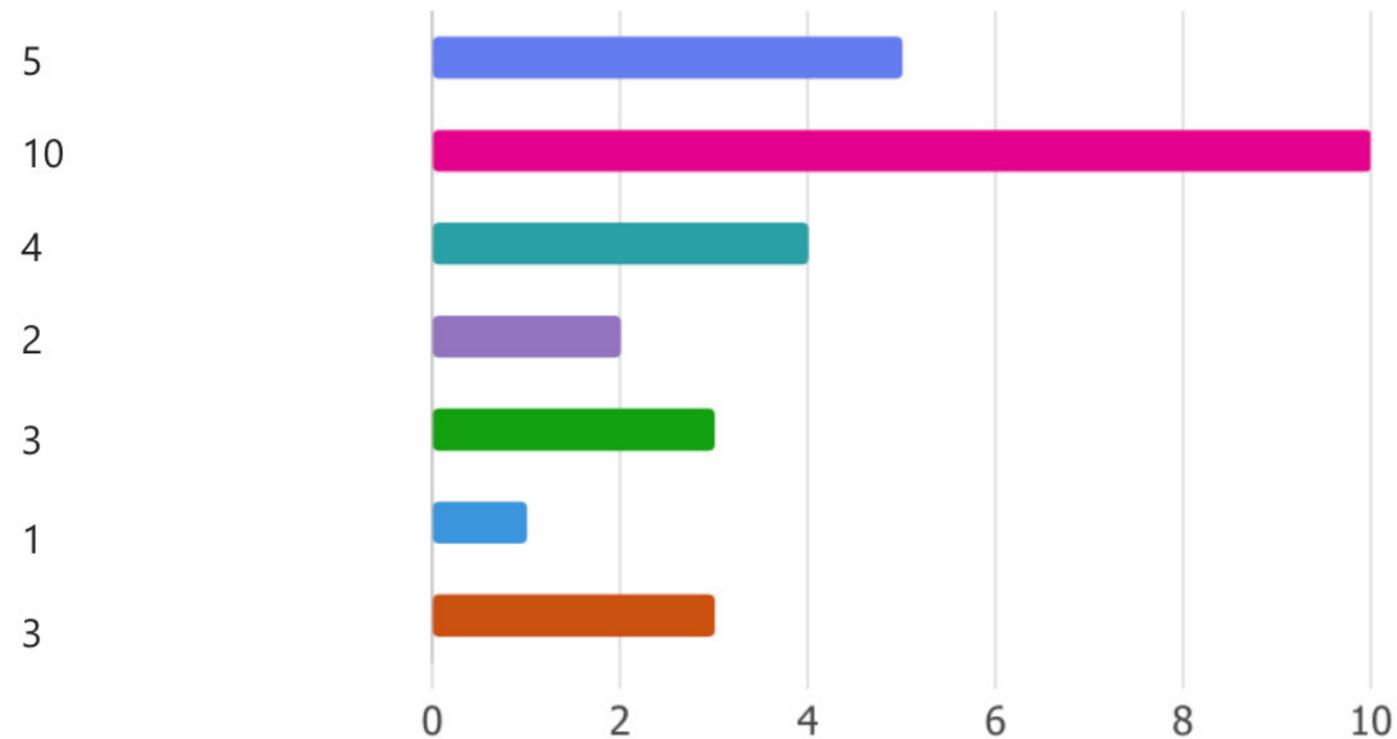
& when this happens

Students struggle to translate ideas into drawings or models

Main technical barriers to students' design development

Which technical areas most commonly act as a barrier to students' design development?
(Select up to three)

- Hand drawing / sketching
- 2D CAD drawing (e.g. AutoCAD)
- 3D modelling (e.g. Rhino)
- Physical model making
- Digital fabrication (laser cutting, CNC, 3D printing)
- 1:1 fabrication / prototyping
- Graphics and portfolio layout



- All respondents selected 2D CAD drawing, followed by hand sketching and 3D modelling
- While 3D appears less prominent overall, a closer look by year reveals that **all tutors teaching Year 2 identified 3D modelling as a barrier, alongside 2D CAD**
- Year 1 tutors, by contrast, focused mainly on 2D drawing and hand sketching
- This suggests that **technical barriers evolve in line with curriculum progression, reinforcing the need for year-specific and staged technical support**

Reflecting on time management

Would students benefit from having more time, or an additional perspective, during studio tutorials?

Yes, a majority of them



60%

It would be relevant to a few students



30%

Time constraints as they are are balanced



10%

- 100% of respondents would encourage support to happen at several points of the year
- This result highlights that not everything can be solved with additional technician support
- If a majority of student would require more time, it probably points to a structural issue
- Technical staff should not fill in for understaffed academics
- It could be relevant to a few students
- A majority of respondents is confident that students need more time to **translate design ideas into drawings or model**

Open responses echoed rather than expanded survey findings

“I have wondered in the past whether **a digital sign-up process could be beneficial**. If we could book sessions with the students during their tutorials perhaps more would attend? Certainly there have been instances where I have nudged a student in the direction of technical support and a week later no action has been taken on their behalf”

“I very often send them to specialist support sessions, as the tutorial sessions are so short as they are and the focus should be on design not technical skills...”

“I would love to know more about what resources are available. I don't feel confident approaching people or things.”

“If it is something quick, I usually try to answer, but mostly refer to [redacted] and extra technical support available.”

“Absolutely. **Almost invariably a student will come to tutorials with a list of challenges using CAD. Typically we have 20 minutes per head and so absolutely no time to work through this whilst pushing the conceptual work.** A HUGE problem is students coming to tutorials without drawings - many struggle with sheeting up out of CAD.”

A pedagogical precedent: Bauhaus

Integrating technical practice into design teaching



Workshop of the Bauhaus carpentry department in Dessau, 1925–1926
[Harvard Art Museums / Busch-Reisinger Museum, Gift of Walter Gropius]

“The creator must become intimately familiar with the process of production, so that form and technique may arise from a single impulse.”

“The aim is not to train artists or craftsmen separately, but to dissolve the boundaries between artistic invention and technical competence.”

Gropius, Bauhaus principles, 1920s

“Art and technology: a new unity.”

Walter Gropius, slogan for the 1923 Bauhaus Exhibition, Weimar

References

Methodology

Martin, B. and Hanington, B. (2019) *Universal Methods of Design: 125 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions*. Beverly, MA: Rockport Publishers.

Creswell, J. W. and Plano Clark, V. L. (2018) *Designing and Conducting Mixed Methods Research*. 3rd edn. London: SAGE Publications.

Whyte, W. H. (1980) *The Social Life of Small Urban Spaces*. Washington, DC: Conservation Foundation.

Technical integration in studio contexts

Wenger, E. (1998) *Communities of Practice: Learning, Meaning, and Identity*. Cambridge: Cambridge University Press.

Wenger is useful here because it frames learning as participation in a shared studio practice, where technical and academic roles contribute different but complementary forms of expertise.

Droste, M. (2002) *Bauhaus, 1919–1933*. Cologne: Taschen.

Sams, C. (2016) How do art and design technicians conceive of their role in higher education? *Spark: UAL Creative Teaching and Learning Journal*, 1(2), pp. 62–69. Available at: <https://sparkjournal.arts.ac.uk/index.php/spark/article/view/18>

Ethical considerations: wellbeing and mental health

BERA (2024). *Ethical Guidelines for Educational Research*, Fifth Edition. British Educational Research Association.

Particularly sections on responsibilities to participants, wellbeing, and power relationships, which emphasise duty of care, minimising harm, and maintaining clear professional boundaries.

Mental health and wellbeing guidance for staff. London: University of the Arts London.

UAL mental health and wellbeing guidance supports my ability to welcome students in studio and to respond appropriately when additional care or support is needed, informed by relevant training I have undertaken

Thank you!