Feedback Challenges in Sprint-Based Assessments

Professor Sharon Cox
Head of Department of Digital Transformation
School of Computing and Digital Technology
Email: Sharon.cox@bcu.ac.uk

BIRMINGHAM CITY University

Introduction

- Aim of Higher Education:
  - to furnish students with the knowledge, skills, experience, and mindset to secure and sustain employment throughout their careers.
- Role of Assessments to:
  - Provide evidence of knowledge and skills.
  - Identify areas of progress and improvement needs.
  - Provide practical experience of industry tasks.
- Industry Context of Assessments includes:
  - Work placements.
  - Simulations.
  - Case studies.
  - Certifications.

Project to Re-Imagine the Curriculum

- Developed a new model of learning and teaching.
- Engaging students with industry-challenge-driven experiential learning, enabling a sprint-based curriculum, delivering employability

- Model implemented through:
  - **Industry-Challenge Assessments:**
    - Assessments based on a challenge set by an organisation.
    - The challenge may be completed in one assessment or multiple assessments in or between modules.
  - **Sprint-Based Assessments:**
    - Set of tasks accomplished within a relatively short time period that produces a specified deliverable.
    - A sprint may assess learning outcomes in one or more modules, crossing module boundaries.

Sprints

- In industry, sprints are intended to increase productivity and produce higher quality deliverables through improved focus and transparency of work tasks.
- Sprints are used in Scrum, an incremental approach to systems development (Rodríguez et al., 2019) that is gaining widespread use in the industry with 97% of 2000 respondents in 91 countries committed to continuing to use it (Scrum Alliance 2018). It is therefore important for students to have experience of the approach (Rodríguez et al., 2019) to prepare them for industry.
- In academia, sprints challenge students to focus intensely on tasks which changes the demand and nature of feedback required.
- Sprints build on flipped learning, where students prepare for a taught session through directed study.

Changing Assessments

Traditional Approach

At the end of the 12 weeks, submit an IT strategy for a given case study.

It is recommended that you approach this task in 4 stages:

1. Analyse organisation.
2. Apply strategic tools.
3. Develop IT strategy,
4. Evaluate IT strategy.

Problem: students did not engage with assessment until weeks 10 and 11.

Sprint-Based Approach

Every 4 weeks, submit a sprint to a client.

1. Analysis of organisation.
2. Application and analysis of strategic tools.
3. IT strategy.
4. Evaluation of strategy.

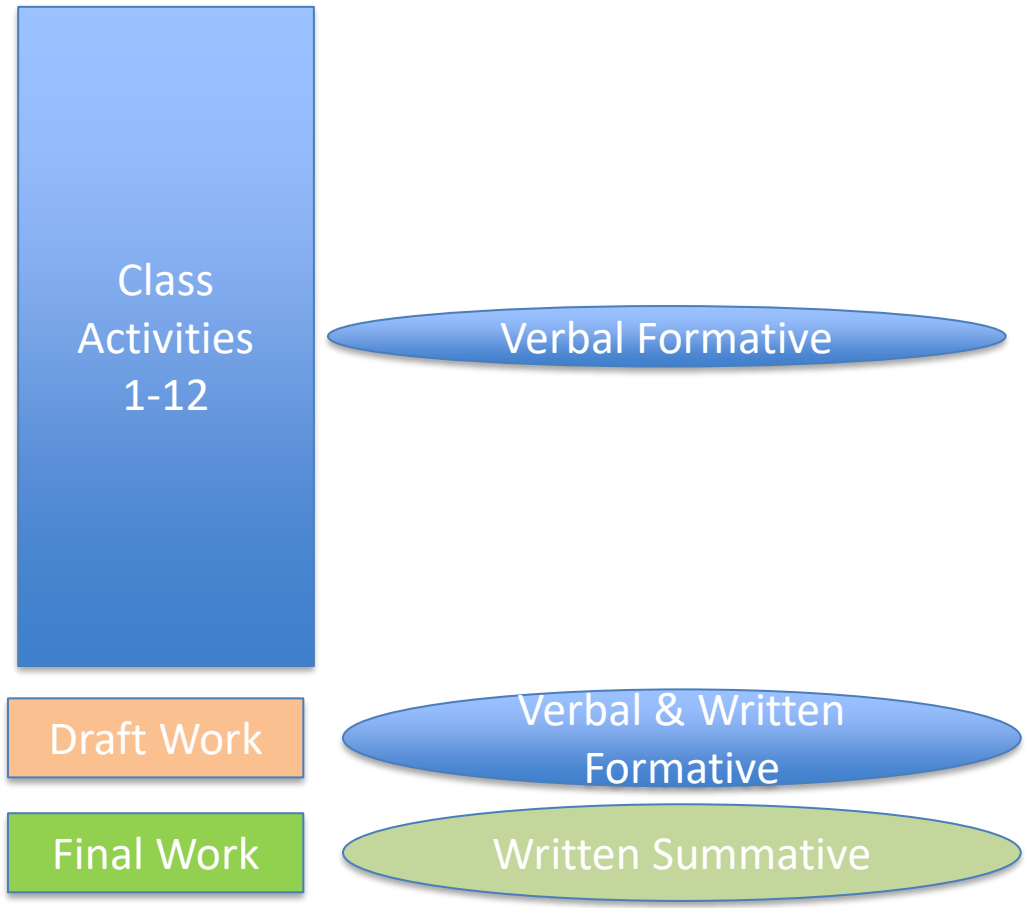
At the end of the module you will pitch your final strategy to the client.

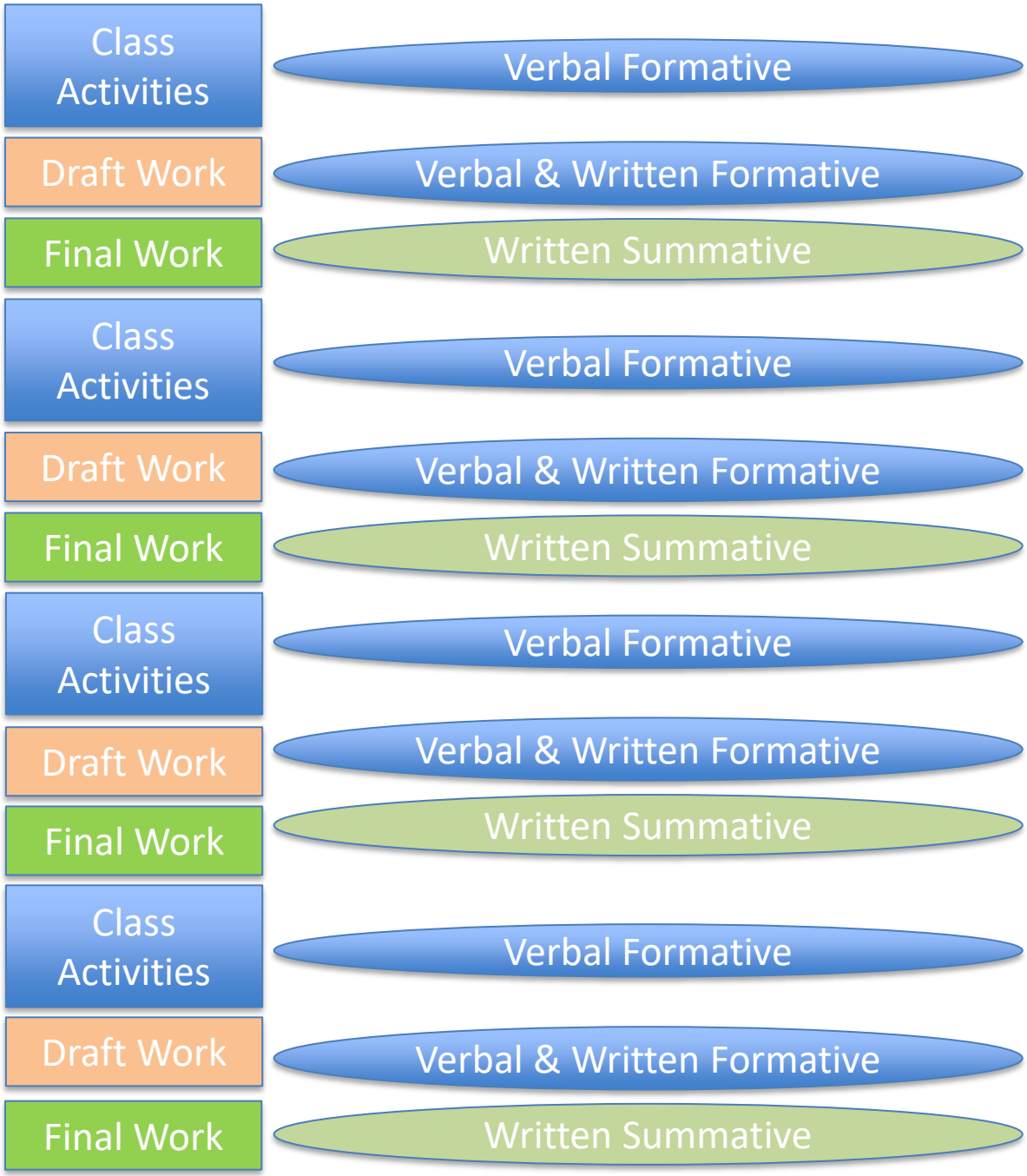
How does this impact feedback?

Feedback

- Winstone (2022) suggests that a student-focused approach,
  - defined by Trigswell, *et al.,* (1999) as an approach to learning and teaching that aims to change and challenge students perceptions,
- is congruent with a dialogic feedback approach.
- Van der Kleij et al. (2019) describe the dialogic approach as one where the challenge is to create participatory feedback processes in which students can take an active role in seeking and using feedback.
- Students typically acknowledge formative feedback as providing opportunities to 'identify what is wrong with their work' in order to improve their mark.
- In contrast, students can ignore summative feedback as merely justifying the mark provided, rather than acknowledging the feedforward lessons to apply in future work in other modules.

Feedback in Traditional Assessment





Feedback in Sprint-based Assessment

Pilots

- A series of pilots were undertaken a undergraduate and postgraduate levels.
- Pilots differed in terms of:
  - Delivery:
    - Ranging from 12 hours a week for 4 weeks, to 4 hours a week for 12 weeks.
  - Weighting of sprints:
    - Ranging from 0%, 2.5%, 25% during the module.
  - Mix of feedback provided:
    - Formative and summative, individual and group, verbal and written.

Results: Undergraduate Pilot A

Plan

- Delivery over 12 weeks.
- 4 sprints during the module.
- Before each sprint students received:
  - Verbal formative feedback in class.
  - Verbal formative feedback in one to one meeting with client.
  - Written group formative feedback.
  - Individual written formative feedback.
- After each sprint students received:
  - Individual written summative feedback contributing 2.5% to the module.
- At end of module, students submitted all sprints for final assessment (90%) and individual written summative feedback.

Results

- Students perceived some of the sprints to be bigger than others.
- Students appreciated the one-to-one meetings.
- Staff found the volume of feedback back challenging.
- 33% of students missed one or more of the sprints.
- Minor fall in pass rate (from 100% to 96%).
- Total feedback = 136,160 words

Results: Undergraduate B

Plan

- Delivery over 12 weeks.
- 4 sprints during the module.
- Before each sprint students received:
  - Verbal formative feedback in class.
  - Verbal formative feedback in one to one meeting with client.
  - Written group formative feedback.
  - Individual written formative feedback.
- After each sprint students received:
  - Individual summative written feedback worth 25% of module.

Results

- Students complained about not having sufficient feedback.
- Students perceived workload of assessment to have increased.
- Staff were challenged to repeatedly provide large volumes of feedback.
- Total feedback = 89,102 words
- 30% students missed one of more sprints submissions (though were given the opportunity to have a revised schedule of submissions dates).

Results: Postgraduate C

Plan

- Delivery over 12 weeks.
- 4 sprints during the module.
- Before each sprint students received:
  - Verbal formative feedback in class.
  - Verbal formative feedback in one to one meeting with client.
- After each sprint students received:
  - Written group formative feedback.
  - Individual formative feedback.
- At end of module, students submitted all sprints for final assessment (100%) and individual written summative feedback.

Results

- Few students engaged in sprints, with most students not starting work on the assessment until week 11.
- Staff were frustrated that students were not making use of the formative feedback opportunities.
- Staff were frustrated by students asking in week 11 for classes from weeks 1-6 to be repeated as students had forgotten what they needed to do in the assessment.
- Client was frustrated by few students engaging with them in a meaningful way.
- Total feedback = 96,320 words.
- 11% non-submission rate (increased from 9%)
- Pass rate (fell from 78% to 53%)

Results: Postgraduate Pilot D

Plan

- Delivery over 12 weeks.
- 4 sprints during the module.
- Before each sprint students received:
  - Verbal formative feedback in class.
  - Verbal formative feedback in one to one meeting with client.
  - Written group formative feedback.
  - Individual written formative feedback.
- After each sprint students received:
  - Individual summative written feedback worth 2.5% of module assessing the accuracy and progress of work, including engagement with client.

Results

- Students complained about not knowing how to improve their work.
- Staff were frustrated to see the same mistakes repeated in each sprint and feedback not being actioned.
- Students did not see the value of client meetings.
- Client was frustrated by students 'talking at them' rather than discussing work and ideas.
- Total feedback = 219,272 words.
- 100% submission rate (from previous 11% non-submission rate).
- Average mark increased and number of students with top marks increased.

Results: Postgraduate Pilot E

Plan

- Delivery 4 weeks, sprint per week:
  - Day 2 and Day 4 formative verbal feedback one-to-one.
  - Submit sprint Day 5.
  - Following Week 1 Day 1 receive Summative written feedback worth 25% of module relating to progress.

Results

- In week 1, the pace was intense, and students asked for extension to the submission due at the end of the first week, though all submitted on time.
- Students admitted being ‘lazy’ on other modules and enjoyed the pace on this module.
- The block format and tight schedule helped bring the weaker students along whilst still allowing the exceptional students to achieve the higher marks.
- 100% submission rate.
- 100% pass rate.
- Average mark improved,
- Total feedback = 103,417 words

Key Findings: Reflection of Sprints

Positive

- Encourages students to be more engaged in each session as deadline is imminent.
- Simulates work environment:
  - Complete work regularly not the night before a deadline.
  - Learn to engage with client and show progress.
- Improved submission rates for postgraduate students.
- Intensity of sprints in block delivery improves marks of all students, particularly weaker students.

Negative

- Discourages students to progress when they miss a sprint – can find it hard to catch up.
- Discourages students if they get a low final mark for one sprint.
- Students do not use the feedback.
- Needs more resources to assess during the module.
- More feedback provided so resource intense.
- Limited impact on marks.
- Undergraduates find pace of submission hard to maintain.

Discussion: Feedback Quantity

- Although the quantity and quality of feedback *increased*, the perception of students was that there was insufficient feedback.
- Further analysis in pilot B suggested that it was not the quantity of the feedback that was of concern, it was that students were given a mark worth 25% of their final mark early in the module that students could not improve upon.
- Students wanted 'more feedback opportunities' to improve their final mark after it had been confirmed. This reflects Orsmond *et al.,* (2005) statement that feedback can be viewed as a process of progressively eliminating errors.

Discussion: Feedback Purpose

- Bailey & Garner (2010) describe feedback as the interface in the student-tutor relationship and that the efficacy of feedback is determined by the commitment of both parties to the process.
- All formative feedback was provided on checklist style templates to help students see how to improve their work. For example:

  Has correct notation been used? Yes / No If no, refer to filename.doc at link_here.

- In pilot D students said that they had not been given feedback on how to improve their work. This showed the importance of spending time reading feedback with students to draw links between student work, feedback, and links to learning resources.
- At the same time, staff became frustrated that the same mistakes were not being corrected in the sprints. It became apparent that students were not reading the feedback provided. A number of students had got into the habit of looking at their mark and not reading the feedback or feedforward.
- Henderson *et al.,* (2019) emphasise the importance of students taking an active role in engaging with feedback

Discussion: Engagement

- Students in pilot C did not engage with sprints that had no marks associated with them.
- Student attendance and engagement in classes increased in all other pilots where marks were given for progressing through the sprints, even if the mark was 2.5% of the final mark.
- Despite improved engagement, in pilots A and B a significant number of students failed to submit work for one or more sprints on time.
- In most cases, this was attributed to illness or family issues during the Covid-19 pandemic.
- Undergraduates found it more difficult to adjust to the regular sprint assessments than the postgraduates, which may be due to the differences in work experiences.
- Undergraduates also perceived the assessment to be bigger than that of other modules, though the assessment had remained unchanged from previous years. The only change being breaking the work into smaller deliverables.
- This suggests more work is needed to prepare students in the transition from study to workplace demands.

Discussion: Timeliness

- Weekly sprints through 4 weeks of block delivery were intense for staff and students.
- There was initial concern about the impact of the intensity of weaker students, though all achieved their best marks on the course.
- The intense focus and high levels of support provided enabled all students to achieve higher marks than they attained in other modules.

Key Lessons from Re-Imagining the Curriculum

- Engagement of students during the module is improved.
- Postgraduate submission rates improved.
- Higher levels of student satisfaction with modules.

- **Industry-Challenge Assessments:**
  - Reflect work tasks but students need additional support to engage with clients effectively.
- **Sprint-Based Assessments:**
  - More aptly reflect the pace of work in industry, and undergraduates need to be supported in adjusting to the change of pace.
- **Feedback:**
  - Requires more staff resources.
  - Needs to be planned so students can be comfortable acting on the feedback
  - Engaging students in the feedback process is important.

Conclusion

- Industry Challenge-based assessments give students real work to do and develop skills in communicating with clients.
- Students see how the asssessments relate to the workplace and levels of engagement are higher throughout the modules.
- Sprints encourage students to work on assessments through the module, rather than at the end.
- Sprints contributed to an increase in assessment submission rates for postgraduates.
- Weaker students achieved higher marks with sprints and block delivery compared with modules the same students had studied in traditional format.
- Sprints need to be introduced to undergraduate students over time to ready them for the pressures of workplace-like timescales.
- Large number of students did not read/act on feedback. Students need to have the opportunity to discuss feedback with staff.

References

- Bailey, R. & Garner, M., (2010), # “Is the Feedback in Higher Education Assessment Worth the Paper It is Written on?” , *Teachers’ Reflections on Their Practices, Teaching in Higher Education,* **15** (2), pp. 187–198.
- Orsmond, P., Merry, S. & Reiling, K. (2005), “Biology Students’ Utilization of Tutors’ Formative Feedback: A Qualitative Interview Study”, *Assessment & Evaluation in Higher Education,* **30** (4), pp. 369–386.
- Rodríguez, G., Gasparini, I., Kemczinski, A. & Veloso de Matos, A., (2019) "Students Perception of Scrum in a Course Project," in: *IEEE Revista Iberoamericana de Tecnologias del Aprendizaje*, **16** (4), pp. 329-336.
- Scrum Allinance (2018), State of Scrum 2017-2018 Scaling and Agile Transformation, https://resources.scrumalliance.org/Article/state-scrum-2017-2018-report
- Trigwell, K., Prosser, M., & Waterhouse, F., (1999), “Relations between teachers’ approaches to teaching and students’ approaches to learning”, *Higher Education,* **37** (1), pp. 57–70.
- Van der Kleij, F. M., Adie, L. E., & Cumming, J. J., (2019), “A meta-review of the student role in feedback”, *International Journal of Educational Research*, **98**, pp. 303–323.
- Winstone, N. E., (2022), “Characterising feedback cultures in higher education: an analysis of strategy documents from 134 UK universities”, *Higher Education,* https://doi.org/10.1007/s10734-022-00818-8

- Professor Sharon Cox
- Head of Department of Digital Transformation
- School of Computing and Digital Technology
- Faculty of Computing, Engineering and The Built Environment.
- Birmingham City University, UK
- Email: Sharon.cox@bcu.ac.uk