Collaborative toolkit creation to support reflective practice in teacher education

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ABSTRACT

Reflection in practice and on practice is a vital aspect of teacher education, especially in enabling student teachers to link theory and practice. However, student teachers' perceptions of what reflection is, and how to reflect on their teaching, varies. Additionally, student teachers may often view reflective practice as a course requirement rather than a supportive tool to enable development of practice. This project aimed to support student teachers to develop confidence when reflecting on their practice by identifying features of effective reflection and considering approaches that they could adopt. This was achieved by developing a stronger understanding of the theoretical models that can support reflective practice and understanding the challenges experienced by student teachers. The participatory study involved eight student teachers and four teacher educators, with existing reflective models reviewed and trialled. Prior to an initial workshop, student teachers approached their reflective practice in a variety of ways. Some needed to write their reflections, whilst others felt that oral reflection and professional discussion supported them more effectively. Student teachers felt supported when they had a staged model to scaffold this process and were drawn towards reflective models with such structure. Drawing on their experiences, a toolkit has been co-created that offers student teachers an evidence-informed framework to assist with confident and effective reflective practice. Indicative findings show that reflecting on practice is a very personal choice. During the co-creation of the toolkit, the student teachers drew on features they had evaluated to be the most effective from existing models whilst allowing for personal tailoring of bespoke models. More than 200 student teachers on a blended teacher education programme will be introduced to the co-created toolkit and encouraged to use it to support confident and effective reflective practice.

Keywords: Co-creation, Student voice, Teacher education, Reflective models, Reflective practice.

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1 INTRODUCTION

To create an innovative learning environment 'teachers need to reflect on their practice in order to learn from their experience' (Schleicher, 2012, p. 38). This understanding builds upon established ideas that reflective practice can support professional development (Dewey, 1916; Schön, 1984). Frameworks worldwide promote reflective practice (Welsh Government, 2015), and being a reflective practitioner is considered an important aspect of teacher development within Initial Teacher Education (ITE) (Hagger et al., 2008). Promotion of reflective practice builds on the ideas of others such as Brookfield (2002, p. 31). Brookfield posits that reflective practice can support 'informed decision making', thus assisting effective teaching.

Whilst being actively promoted within ITE, reflective practice can be a source of debate. Firstly, the effectiveness of student teachers' reflective practice may be limited by a lack of experience (Hagger et al., 2008). As a result, 'practical theorising' (McIntyre as cited in Brooks, McIntyre & Mutton, 2023) is advocated, which encourages student teachers to draw on different sources of knowledge (such as research, educational theory and feedback) to help them become 'informed educators' (Warren-Lee et al., 2024). A further aspect is the varied ways student teachers value and understand reflective practice as part of their professional development, this can be linked to notions of being 'forced' to practise reflection (Hobbs, 2007).

This paper examines a small-scale project in which eight student teachers and four university-based tutors explored and developed reflective practices. Using a co-creation process to build a reflective practice toolkit, that included two new models to support reflective practice, the aim was to promote reflective practice whilst avoiding a forced and assessed approach to this important aspect of becoming a teacher (Hobbs, 2007). The co-creation process promoted learner voice, with the student teachers and teacher educators positioned as joint agents in the activity. This resulted in open dialogue from all participants (Omland, et al., 2025).

The student teachers involved were on a two-year pan-Wales Post Graduate Certificate in Education (PGCE) programme, following either a part-time or employment-based ITE route available bilingually (English or Welsh) (Glover & Hutchinson, 2023).

1.1 Reflective practice models

The phenomenon of critical reflection – where individuals carefully analyse actions, determine why they happened, the impact and how aspects could be developed - is not new. Even though there is not a single definition or single model of reflective practice, the concept of evaluating processes for strengths and areas for improvement permeates through Welsh Government documentation (2015; 2017; 2023).

According to Dewey (1933), and Vygotsky (1978), learning stems from experiential learning, and social constructivism frames reflection as a result of social interaction. The research questions that underpinned the process reflect this.

What are student teachers' perceptions of reflecting on practice?

How effective are theoretical models for supporting student teacher reflections?

In developing the methodology, it was considered crucial that the student teachers were able to select at least one established reflection model during the first workshop, to trial and experiment with during their subsequent practice learning. The second workshop provided a point in time for student teachers

to reflect on the models they had trialled, explain how they had impacted on their reflective practice, and to engage in professional discussions around their effectiveness and resulting outcomes. This resonates with Schön's (1984) reflection-in-action and on-action, highlighting the role of professional conversations in shaping practice. Dewey's (1933) foundational research into experiential learning inspired later development by Schön (1984) to differentiate between thinking during an activity 'in' and 'on' action, with deeper considerations conducted after the activity. These concepts are critical for student teachers, firstly as they make meaning of actions that took place in lessons and secondly, feeding forward into effective planning and lesson design.

In the context of critical reflection, Vygotsky's concept of the Zone of Proximal Development is especially relevant. It suggests that learners can perform tasks, such as reflection with support from a more knowledgeable other, such as a mentor, until they gain autonomy. These aspects directly informed the design of the research project, which included co-creating a toolkit of reflective frameworks that gradually build student teachers' capacity for independent critical thinking. In this project the co-constructed reflective frameworks provided opportunity for the discussion of key reflective principles. The toolkit also includes video clips of student teachers explaining their reflective approaches and draws on deeper, flexible reflection through structured interactions, promoting professional growth and critical thinking.

As reflection processes have advanced, questions around depth and impact have challenged thinking. Peltier et al. (2005) and Ketonen & Niemenan (2023) refer to a reflective continuum model, to recognise the intensity and depth of reflection. To illustrate these varying depths of reflection, Peltier et al. (2005) developed the Reflective Learning Continuum which identified reflection from 'habitual action' to 'intensive reflection' (p. 250). The varying levels highlight progression from routine responses to deep, critical thinking, whilst also emphasising the importance of mentor and student teacher interaction. This moves away from traditional binary views of whether someone **is** reflecting or **not,** and acknowledges that reflection is not a rigid process. In designing the reflection models with the student teachers, it was important to recognise their desire for flexibility in *what* was reflected and *the way* it was reflected. Enabling student teachers to experiment with mixing models, using audio, written and bulleted reflections, and supported discussions with mentors, were freedoms that were expected by the student teachers.

The diversity of reflection models in professional contexts is extensive. Some are simple such as 'what?', 'so what?' (Borton, 1970). Others are linear, providing opportunities for reflection over a longer period whilst making explicit links to theory (Zwozdiak-Myers, 2012). Original models often form the basis of another and, consequently, popular models exist in many forms and this can present challenge in attributing design ownership. Therefore, an extensive number of reflective models exist, developed for different contexts, disciplines, and personal preferences across education, healthcare, coaching, and leadership. During this project a range of models were discussed and selected by the student teachers to trial. These models ranged from Bassot's Integrated Reflective Cycle (Bassot, 2016), to Borton's model of 'what?', 'so what?' (Borton, 1970). Other models demonstrated explicit links to theory (Zwozdiak-Myers, 2012) or flexibility for use alongside other models (Brookfield, 2002). All the models considered can be found in the Appendix, along with which model/s each student teacher explored further and trialled for the project.

1.2 Capturing reflective practice

The way reflection is captured is also important and a range of media including journals and audio technology is suggested (Welsh Government, 2015; Ketonen & Niemenan, 2023). Possessing

particular personal skills to support reflective practice is also important. For instance, fostering an open-minded approach, taking ownership of personal development, collaborating with peers, and utilising evidence-based reasoning are cited by some (Pollard & Tann, 1987; Pollard, 2014). This resonates with others, who cite 'open-mindedness – to new ideas and thoughts; wholeheartedness – willing to seek out fresh approaches' (Welsh Government, 2015, p. 8).

However, Grigg et al. (2024) explore philosophical issues of 'what' reflection is for, questioning whether it is appropriate for external people to facilitate a process that is inherently personal. Others have also questioned 'who' the reflection is for and highlight potential ethical tensions (Hobbs, 2007), particularly for student teachers who are expected to be honest under assessment (Hobson & Maldarez, 2013). It is also cautioned that reflections can be hindered by a desire to shield self-esteem from judgement (Asadoorian et al., 2011). Others have observed that reflection often stops at problem identification, neglecting deeper analysis of the underlying cause (Hagger & McIntyre, 2006; Jones, 2014). This resonates with describing surface-level engagement as 'thoughtful action' rather than true reflection (Mezirow, 1990). Hagger and McIntyre (2006) consider that there can be 'limits to what student teachers with little accumulated practice can learn from simply looking back on what they have done' (p.58). Rather, they need to identify the issue in order to engage with more experienced teachers, who can support their 'practical theorising' (p. 58).

Mezirow (1990) recognises the effect of working collaboratively, emphasising critical reflection as transformative and a way of challenging beliefs through dialogue. To do this effectively, student teachers might view situations from alternative perspectives. Therefore, when co-constructing the reflection frameworks, supporting questions were added to encourage the student teachers to consider other aspects. The views of others, such as mentors, learners and peers were also considered in the supporting questions, thus resonating with the principles of Brookfield's (2002) lenses.

Taking the perspective that reflective practice helps student teachers become more self-aware, to analyse their teaching, to improve performance and link theory with classroom experiences, as well as nurturing the growth mindset necessary for continuous learning, this project aimed to identify key features that effectively support meaningful reflection. These insights informed the collaborative creation of two new reflective models that are included in a toolkit with other resources such as audio and video materials where student teachers share their 'top tips' and experiences of reflective practice to support student teachers to develop as reflective practitioners.

2 METHODOLOGY

Drawing on social constructivism, where social interaction forms the basis of knowledge construction (Vygotsky, 1978), co-creation is gathering momentum as a theoretical underpinning for advances in higher education (Omland et al., 2025). It is this theoretical basis that informed the approach for the collaborative activity undertaken. Dialogue, positioning, voice and agency are identified as critical to the co-creation process (Omland, et al., 2025), which resonated with the purpose of the project, particularly in respect of the student teacher participants. In order to ensure that the context was conducive to open dialogue between all participants, the first hybrid workshop opened with the recognition that there were no hidden agendas to the project, and that any ideas shared would be accepted without judgement or manipulation by members of the collective group of student teachers and university tutors. This ensured that student teachers were able to position themselves as equal participants in an open discussion about the development of reflective practice during ITE. The fact that the student teachers led the discussion regarding their experiences of reflecting on their own

practice not only gave them opportunity to voice their preferences and their challenges with current practices, but provided them with agentic capability: they recognised that their contributions were shaping the outcome of the project and that they were prominent in the collaborative creation of the toolkit.

2.1 Data gathering

Student teachers were invited to contribute to two hybrid workshops with teacher educators, to trial and reflect upon selected reflective models over a specified period of time, and to co-create a toolkit that would include new reflective models to support the student teachers' reflective process. Figure 1 provides an outline of the project activities. The project received approval from the university's research ethics committee, and informed consent was gathered, with contributors free to withdraw at any time.
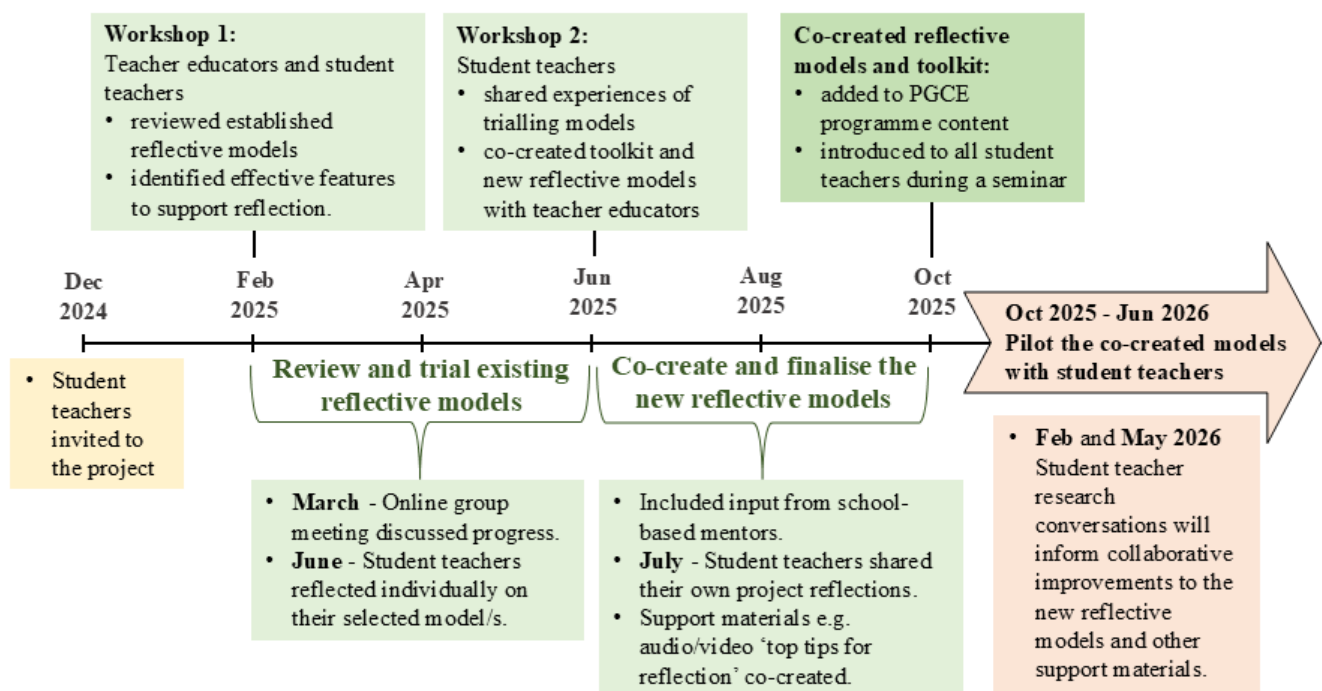

Figure 1: An outline of the project's activities

The data gathered consisted of observing the workshop discussions and activities, student teachers' written reflections completed during trialling of the reflective models, along with their narrative accounts of the experience. All of these activities contributed to the development of the toolkit resources and the new reflective models as the preferred elements for models were recorded along with developing a better understanding of how student teachers currently reflect in practice, and the benefits and challenges they experienced. Observing can be particularly useful when a small group or a specific activity is the focus, and can offer powerful insight (Cohen et al., 2018; Katz-Buonincontro & Anderson, 2018). To mitigate against the acknowledged recognition that this approach can be viewed as subjective, in this instance the data collected remained factual: an account of the discussion. To ensure consistency, although the student teachers had autonomy and flexibility to trial and reflect on their choice of model according to their own preferences, upon the completion of this stage they responded to specific common questions: e.g. How did you work? What worked well? How did you overcome challenges?

The sample consisted of eight student teachers and four teacher educators who participated in the workshops and co-creation activity. As illustrated in Table 1 the eight student teachers brought different experiences to the project in regard to the phase taught, and the route and year of study. The model/s that each student teacher explored further and trialled are listed in the Appendix.

Table 1: Project participants

Participants	Primary	Secondary	Employment-based	Part-time	Year of study - 1	Year of study - 2
Student teachers	5	3	6	2	2	6
Teacher educators	2	2				

Underpinned with the co-creation framework, flexible thematic analysis applied inductive and deductive approaches to the data (Braun & Clarke, 2022). Familiarisation with the data supported the development of a coding framework that incorporated dominant themes from the literature such as 'mode of reflection', 'frequency' and 'challenges'. Yet, at the same time, emerging themes were also included, such as 'target setting' and 'the learner perspective' (Krippendorff, 2019). Dialogue, positioning, agency and voice are interwoven across the co-creation process, and the findings demonstrate the importance of these for co-creation between student teachers and teacher educators.

3 RESULTS

In this project communicative practices between student teachers supported the fieldwork and the co-construction of new reflection models. Student teachers and university teaching staff working together in this manner is interpreted as 'a collaborative, reciprocal process through which all participants have the opportunity to contribute equally,' (Cook-Sather et al., as cited in Omland et al., 2025 p. 3). Thereby all participants' strengths and contributions to the overall outcome are recognised. The elements of dialogue, positioning, agency, and voice are not simply characteristics of a co-creation framework, they also support reflective practice, making them relevant to the evaluation, trialling, and designing of new reflection models. Dialogic approaches between student and staff partnerships in this project enabled student teachers' voices to be heard and incorporated into the iterative process of reflection model design. In this section student teacher authored vignettes are included. Thus, the sociocultural approach to knowledge construction in a shared community of practice provided joint agency to shape developments, without the burden of hierarchical positioning due to power relationships (Hobson & Maldarez, 2013).

3.1 Reflective practice experience

At the beginning of the project the student teachers expressed a range of experiences and preferences on reflective practices. Several felt they focused on negative aspects of their practice and relied on mentor's feedback on what was going well (as illustrated by student teachers A and B). Written reflection seemed more formal but harder to complete given the demands of the school day, while oral reflections were more immediate, yet easily forgotten if not recorded. Some preferred the relaxed nature of a spoken reflection, although very few reported using digital tools or watching themselves

in video reflections. Constraints such as outdoor settings or limited time impacted reflection opportunities. Student teachers and university tutors agreed that reflective styles vary, but reflection, much like Assessment for Learning, can help individuals identify what works best for their own development. It was recognised that with critical reflection being such a key aspect of practice development, there could be more emphasis during their PGCE to support students to do this effectively. Here, student teacher A comments on their approach to how they select the focus of any reflection and the practicalities of the process. They also mention how they appreciated the flexibility of the project, as it allowed them to be more creative and overall, more productive in their reflections.

Student teacher A

During my ITE programme I gained experience across the full primary range, from Reception to Year 6. This gave me a strong understanding of progression and transition, and I am now preparing to begin my Newly Qualified Teacher (NQT) journey with a clearer sense of my strengths and areas for development.

Mentors and tutors supported me when my reflection was honest and I was open to sharing, expressing and receiving ideas. I chose lessons that I had put a lot of input in planning and delivering to reflect on, or I reflected on lessons where I was trying something new. I talked a lot with my mentors and colleagues to discuss what worked and what didn't work in lessons and why and how I could make a change to improve the quality of learning experienced by my pupils. I used post-it notes to help me remember strategies in future lessons. I also observed my colleagues to have conversations about learning and teaching and the changes they had made or would make: ideas coming out of these collaborative reflections were evident in my long-term and short-term planning.

During the trial period of the project, I used my chosen model to support my reflection activity. The model helped me stay focused when reflecting rather than it becoming a chore and encouraged me to purposefully link it directly to my targets. I appreciated the freedom to explore a chosen model which saved time as I was streamlining my reflection and making quick notes. The model also helped me to think of reflection as creative thinking which wasn't encased by a reflection box (as in the usual proforma) with the same questions to answer every time, which could get repetitive and counterproductive.

3.2 Trialling the reflective models

After trialling their chosen models (see Appendix) for six weeks, the student teachers shared their views on the essential characteristics of reflective practice and models that could support reflection. All students reported some positive aspects of the model they trialled. This ranged from focusing on improvements, linking to teacher development and using the supportive questions. Other positive factors were about focused thinking time, having a structure to follow, supporting formal assessments by linking to literature and programme resources, and for one, using the model as a reflective tool with pupils. Working with the reflection model also provided students with key benefits of maintaining enthusiasm and building confidence. For example, as noted by student teacher B having permission to lead benefited them by giving them opportunity to focus on the aspects important to them. However, for some, limited time was challenging for effective critical reflection, whilst some felt the prompt questions were not always appropriate; they overcame this by adapting the questions,

for example: 'I cherry picked the questions that suited to develop my reflection for a particular lesson or event' (student teacher D). Students overcame other challenges by adding theory at relevant points, making mind maps, focusing on content rather than model design and discussing challenges with their mentor or other school colleagues. Here, student teacher B comments on the impact of others on the development of their own reflective practice, as they observed more experienced practitioners reflect and were supported to develop their own reflective practice.

Student teacher B

I am currently at the end of my second year on the PGCE primary employment-based route. I have been based in an inner-city school with a mixed Reception/Year 1 class and a mixed Year 2/3 class.

In school, I noticed different examples of reflective practice. Experienced teachers used 'in the moment' reflection leading to adaptations to activities and lessons. Through meeting discussions or ad hoc verbal reflections I witnessed practitioners sharing both good practice and areas for improvement across single lessons right up to full topics.

The feedback, advice and support of experienced and supportive mentors has been key to developing my skills as a reflective practitioner during the PGCE. They supported me to notice the positive things in my teaching as I started reflecting in a negative way, always looking for things to improve. They really changed my mindset. My mentor also allowed me to develop my 'in the moment' reflective skills and implement strategies and tools within the classroom. Weekly discussions with a reflective focus have also had a positive impact. My mentor allowed me to take the lead in these reflections, encouraging me to look for positive areas of my practice, to identify areas to improve and suggest strategies or learning opportunities based on my own targets set by reflection and evaluation.

Initially, during my PGCE I used the written record sheets for reflection. During this project I have continued to use written reflections, as I found this worked well. I chose a variety of reflections during this project, to trial the compatibility of the model I had chosen. I found it easier to pick a lesson I thought had good points, or things to learn from, and answered the prompts through reflection.

The students also commented that using the reflection model helped them think more deeply about the topic. One student highlighted how reflection had helped change their practice: 'I adjust lessons and tasks depending on how the previous lesson has gone' (student teacher E). Another made the link between theory and practice, illustrating the positive impact this has had: 'Reflecting in more depth and detail has supported my academic writing when linking to my own experiences' (student teacher D). Other ways the models helped included seeing the lesson from another perspective, uncovering new techniques, and helping to process feelings about a lesson. Student teacher A also noted that using a reflection model saved time by 'streamlining my reflection and making quick notes'. And as illustrated by student teacher C, incorporating the views of learners has been valuable too. Student teacher C also highlights the negativity that can emerge when there is a focus on what did not go well.

Student teacher C

I am currently finishing my second year of the Employment-based Secondary PGCE course teaching in a through - school (ages 3-16) in South Wales.

Previously at my school I was involved in a project looking at self-reflection amongst NQTs; this gave me valuable insight into how different people reflect in different ways and how effective they are. This was valuable experience leading into the Reflective Practice Project, which has allowed me to trial different models to reflect not only on my own teaching but also on how to help pupils reflect on their learning in a way that supports progress and highlights areas of positivity or development in my teaching.

Prior to the project, I was recording my reflective practice using the evaluation forms attached to the lesson plans provided by my university. The frequency of these decreased as the course progressed, eventually dropping to about one per week. The focus was mainly on what didn't go well, and at times, this felt rather negative and demotivating.

The models I chose aimed to incorporate multiple dimensions of reflection. One model (Brookfield, 2002) encouraged reflection not just from myself but also from peers, learners, and existing literature. When paired with the CARL framework (The University of Edinburgh, 2024), this approach gave me a broad understanding of how a lesson went from a variety of perspectives.

Using the prompt questions built into the models was time saving, as it allowed me to focus on the reflection itself rather than creating questions beforehand. Exploring existing literature through the lens of reflection also helped develop my academic knowledge for university assessments. Additionally, it opened up opportunities to include more pupil self-evaluation that directly linked to feedback and lesson evaluation.

Consequently, the following features were proposed by the student teachers as being required in any model created to support reflective practice:

- Set a focus for the reflection from the outset

- Uncomplicated language

- Clear structure to follow

- Not too many stages as this is overwhelming

- A range of prompts and guided questions that can be selected or adapted

- Include opportunities for positives/successes and areas for development

- Contain clear and honest examples

- Cyclical approach aligning to enquiry

- Emphasis on how aspects link to target setting and professional development

- A prompt to think about the professional standards

To summarise, the co-creative approach to exploring effective reflective practice has been successful in providing a platform for equal input from student teachers and university tutors all motivated to

improve the reflective process. Two new models to scaffold student reflections are currently being piloted with student teachers on the PGCE programme.

One offers a cyclical approach including prompts to draw out – what happened and why, what was the impact, and what the next steps will be. This is currently being referred to as 'Frames of reflection', (see Figure 2). The second model is presented in table form with prompts to draw out the context, response, results and a selection of sub-questions provided to assist the reflection. Figure 3 illustrates the template for this one, which is currently known as 'New perspective model'. Both of models are included in the reflective toolkit – other toolkit content includes audio, video and written materials offering student teachers support/ 'top tips' for their reflective practice. Figure 4 illustrates some of the other resources included in the toolkit.
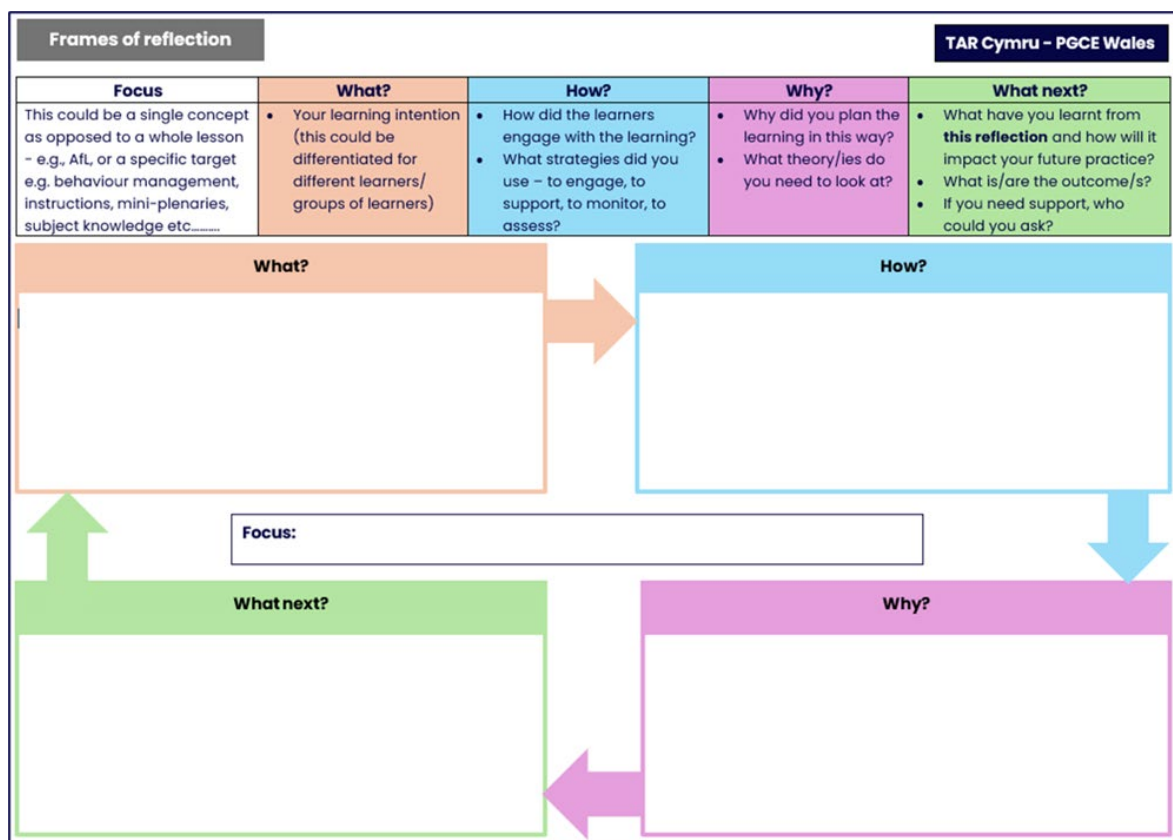
Figure 2: Frames of reflection – a new reflective model

	Focus	Prompts	My response
1	Context	i. What am I reflecting on? (e.g. classroom based, professional conversation (parent/ mentor/ Teaching Assistant), wider school.......... ii. Specific details – Who, when, what? iii. Were any other factors significant?	i. ii. iii.
2	Response	i. Why did I do what I did? Was this informed by any theory? ii. How did the learners/ others react? iii. Did anything significant happen? iv. How did I respond? v. Why did I respond this way? vi. How did I feel? vii. Does it link to any existing targets?	i. ii. iii. iv. v. vi. vii.
3	Outcome	i. Did everything go as I expected? ii. Outcomes for learners / others? iii. Progression? iv. What went well? v. Any challenges?	i. ii. iii. iv. v.
4	New perspective	i. What do I want to adapt or develop? ii. What other perspectives might I consider? (e.g. learners, mentor, staff) iii. Is there a new strategy I could try? iv. Can I draw on any theory/ies? v. What targets could I have? vi. Is there anyone who could help me? vii. What are my next steps?	i. ii. iii. iv. v. vi.

Figure 3: New perspective model – a new reflective model

Top tips to remember for reflection
(Audio – 30 secs)

Video 1 – Reflective practice
(Video – 2 mins)

Video 2 – More top tips for students
(Video – 6 mins)

Video 3 – Help from your mentor
(Video – 5 mins)

Video 4 – Capturing reflections
(Video – 7 mins)

Examples of reflections using the models

Figure 4: Examples of some of the other toolkit content

As noted by the student teachers they will also take forward a keen motivation for reflection to be a contributor to their future development. For instance, it is apparent that student teacher A had developed an appreciation for the importance of their reflective practice as they progressed through the PGCE programme, recognising the significance of always being honest.

Student teacher A

Through this project, I realised that reflection needs to be honest and purposeful to be truly effective. At certain points in the programme, I had seen it as a task to complete, but I now understand it as central to improving my individual practice. I began reframing the professional standards into reflective questions, which helped to structure my reflective-thinking and keep my development focused. After my first observation, this approach enabled me to pinpoint specific areas to improve and take meaningful next steps. For me, reflection has to be an honest process for real growth to happen, and it has to come from me wanting to genuinely improve rather than to make my document 'look' and 'sound' good to anyone else. By using the reflective questions to reflect on practice, the professional standards became less of a checklist and more of a tool for self-awareness and realignment, something I'll carry forward into my NQT year.

Student teacher B

The project has given me a better understanding of the impact meaningful and focused reflection can have on improving practice. I enjoyed exploring the use of more detailed prompts and being able to select the ones that are most appropriate to the teaching and learning I was reflecting on. I think the main thing that I will take forward from this project is the importance of being a reflective practitioner and the impact this can have on your teaching practice. Nobody is perfect, even teachers with years of experience have lessons that may not go to plan. Reflection and evaluation are key tools to develop as a teaching practitioner and seem to be woven into the role. I have also seen the importance of reflection with a colleague or mentor. They may notice or see something that you didn't (especially the positives) and will be able to offer tools and strategies to support you.

Student teacher C

As a result of this project, I have had new insights into beneficial ways to self-reflect upon a lesson and further my practice in doing so. The Brookfield (2002) model included a section where I was to link existing literature to my evaluations and in doing so, I was able to build up a bank of literature that was useful in both furthering my practice and also using during my professional enquiry. I believe the most important part that I will take forward in my practice is to ensure I am involving others in my evaluations; too often it is easy to self-evaluate and only focus on the negatives, but the inclusion of peers and learners gives you a new lens to view how your lesson was perceived and the positives and areas of developments that they suggest.

Student teachers B and C highlight the importance of being flexible with their reflective practice, such as selecting the prompts most applicable to their situation, and prioritising the involvement of others, which can help ensure a positive approach to any reflective practice.

4 CONCLUSIONS

This study aimed to develop reflective practices within a two-year PGCE programme. University-based tutors were keen to understand student teachers' perceptions of reflection within the course requirements, and to encourage meaningful reflective practice through the co-creation of a reflective

practice toolkit. By promoting student teacher voice within the study, students were able to contribute a range of views held towards reflective practice prior to their involvement in the study. Data suggests they were, at times, engaging in surface-level reflection (Mezirow, 1990) or, as student teacher A explains, viewing it simply as 'a task to complete'. Additionally, as noted by student teacher B for example, they were aware that they did not always take a balanced view, tending to focus on negatives, and as noted by student teacher C this led to demotivation and increased reluctance to engage in reflective practice.

The project design gave student teachers agency to explore and choose from models of reflective practice which tutors had selected to 'intentionally initiate action' (Omland et al., 2025, p. 7). Discussions positioned staff and students as joint agents, which allowed for open dialogue about ideas and experiences of using the models. For example, this open dialogue allowed university tutors to explore student teachers' comments about the need for further guidance on reflective practice within their PGCE. Tutors could therefore see that they needed to play a more pro-active role in helping student teachers understand the significance of reflective practice, helping students move away from feelings of being forced to complete a task (Hobbs, 2007). In this sense student teachers were voicing their ideas that the development of reflective practice happens in collaboration.

A further aspect of working in collaboration was the value placed by student teachers on their professional reflective dialogue with school-based mentors. It could be argued that the student teachers were aware of their lack of experience (Hagger et al., 2008), and understood that they needed to draw on different sources of knowledge, including mentor dialogue, to help their practical theorising (Warren-Lee et al., 2024; Brooks, McIntyre & Mutton, 2023). Whilst Grigg et al. (2024) question the role of external people facilitating an inherently personal process such as reflection, evidence from the student teachers suggest that mentors and tutors play an important role in supporting reflective practice and its development. For example, student teacher A found that both mentors and tutors supported their ability to reflect honestly and be open to 'sharing, expressing and receiving ideas', as advocated by Welsh Government (2015).

Student teachers experienced agency to combine and adapt the models. All student teachers found the reflective models helpful in their reflections 'on' action (Schön, 1984) and they also helped scaffold mentor-student dialogue. A key feature of the models selected by students was the inclusion of prompts, consequently the student teachers drafted prompts they felt applicable for their peers, with contributions from the university tutors also reviewed.

During the project's final stage, a reflective practice toolkit was co-created (Figure 4). The collaborative approach throughout clearly indicates reciprocal arrangements from all involved ensured benefits for future student teachers as an effective scaffold to support reflection, as well as with university tutors committed to contributing to developing a reflective teacher workforce in Wales. Two bespoke reflective models will offer students choice and agency in how they practice and scaffold their reflective practice. Supportive materials such as exemplars of completed reflections, recordings of student conversations around reflective practice and taught seminar materials also provide wider guidance to help student teachers develop meaningful - and personal - reflective practice. Despite these successes to date, it is acknowledged that this project does have limitations. For example, it has drawn on the input of a small number of student teachers and university tutors. However there is potential to engage with school-based colleagues more in future to contribute to finalising all the toolkit materials. The length of time trialling the models could have

been extended, and due to time constraints there was not time for the student teachers who participated in developing the new models to pilot the models they co-created.

Nevertheless, the co-constructed reflection toolkit, that includes the two new reflective models (Figures 2 and 3) is currently being piloted by other student teachers on the PGCE programme and their feedback will be used to refine the materials during 2026. As mentioned by the student teacher participants, and supported by Grigg et al. (2024), reflection is a personal endeavour, that may be enacted in a myriad of ways depending on the individual's setting, focus and preference. The new reflective models and the rest of the toolkit resources will be evaluated for their ability to allow scaffolding of reflective learning that is flexible enough to accommodate personal preferences whilst also ensuring effective reflection.

> *"We do not learn from experience … we learn from reflecting on experience"*
> *(Dewey, 1933, p. 78).*

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APPENDIX: The reflective models reviewed by the student teachers, with those they selected to trial identified

Model	Reference	Student teacher/s
Asadoorian et al. – Non-reflector, reflectors and critical reflectors	Asadoorian, J., Schönwetter, D.J. & Lavigne, S. E. (2011). Developing Reflective Health Care Practitioners: Learning from Experience in Dental Hygiene Education, *Journal of Dental Education*. 75(4).	D
Bassot – Integrated Reflective Cycle	Bassot, B. (2016). *The Reflective Practice Guide: An interdisciplinary approach to critical reflection*. Abingdon, Oxon: Routledge.	E & F
Borton – model for reflective practice	Borton, T. (1970). *Reach, touch and teach: student concerns and process education*. New York: McGraw-Hill.	G
Brookfield – Four Lenses	Brookfield, S. (2002). Using the Lenses of Critically Reflective Teaching in the Community College Classroom. *New Directions for Community Colleges*, 118, 31-39. DOI: https://doi.org/10.1002/cc.61.	C & H
Gibbs – Learning by doing	Gibbs, G. (2013). *Learning by doing: A guide to teaching and learning methods*. Oxford Centre for Staff and Learning Development.	
Grigg et al. – The Pit Stop Model	Grigg, R., Lewis, H., Morse, M. & Crick, T. (2024). Rethinking student teachers' professional learning in Wales: Promoting reflection-in-action, *The Curriculum Journal BERA*. https://doi.org/10.1002/curj.271	
Kee et al. – The RESULTS Model	Kee, K., Anderson, K., Dearing, V., Harris, E. & Shuster, F. (2010). Results coaching plan for action: essential for unleashing promise and possibility. In K. Kee, K. Anderson, V. Dearing, E. Harris & F. Shuster (Eds.), *Results coaching* (pp. 167-187) Thousand Oaks, California: Corwin Press.	
Morris – Experiential Learning Cycle	Morris, T. H. (2020). Experiential learning – a systematic review and revision of Kolb's model. *Interactive Learning Environments*, 28(8), 1064-1077, https://doi.org/10.1080/10494820.2019.1570279	H
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University of Edinburgh	https://reflection.ed.ac.uk/reflectors-toolkit/reflecting-on-experience/carl	
The 5R Framework for Reflection/ University of Edinburgh	University of Edinburgh (2024). The 5R framework for reflection, Available at: https://reflection.ed.ac.uk/reflectors-toolkit/reflecting-on-experience/5r-framework	B
The Four 'F's / University of Edinburgh	University of Edinburgh (2024). *The four F's of active reviewing.* Available at: https://reflection.ed.ac.uk/reflectors-toolkit/reflecting-on-experience/four-f	A
Welsh Government – Model of Reflective Practice	Welsh Government (2015). *Reflective Practice.* Welsh Government.	
Whitmore – The GROW Model	Whitmore, J. (2009). *Coaching for Performance: GROWing Human Potential and Purpose: The Principles and Practice of Coaching and Leadership.* 4th edn. London: Nicholas Brealey Publishing.	
Zwozdiak-Myers – Dimensions of Reflective Practice	Zwozdiak-Myers, P. (2012). The teacher's reflective practice handbook: becoming an extended professional through capturing evidence-informed practice. Abingdon: Routledge.	