Using OODA Loops to Build Sustainable Practice into Business Education

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Abstract

The concept of 'reflective practice' has many applications in business education, research and practice. However, the theories that underpin this concept are arguably dated and not suited to the uncertainties of the modern world. This chapter explores ways we might use John Boyd's OODA loop theory to rethink reflective practice and put sustainability at the heart of an inclusive, forward-thinking curriculum.

Keywords

Management education, Reflective practice, OODA loops, Sustainability, Strategy

1 Introduction

The idea of 'reflective practice' is an important one in higher education and is taught in various forms across a range of disciplines (cf. Bruno and Dell'Aversana 2016; Peabody and Noves 2017; Treacy and Gaunt 2021; Ali 2022). Many universities run compulsory modules on reflective practice to help placement students think critically about their time in industry. Reflective practice is also often taught as part of modules that include some form of 'practical' element, where students are required to write personal reflections on their group work and/or individual projects.

But of course, reflective practice is not just limited to the classroom. It is also a key part of continuing professional development (CPD), especially in the fields of healthcare (HCPC 2022a, 2022b; BPS 2022) and medicine (Grant et al. 2017; AOMRC et al. 2022). This helps to ensure that professional standards are met and that practitioners are engaged in a continual process of self-reflection and improvement (NHS 2022; Mantzourani et al. 2019).

However, there is a problem.

Many of the most widely used models of reflection were designed several decades ago for a world that is very different to the one we live in today. Indeed, it has been argued that many of our most well-established models 'derive more from the prevailing ideological and institutional context of adult education in the 1970s than from focused programs of inquiry about the connections between experience and reflection in learning' (Seaman 2008: 8). This comment aligns with more recent observations that the process of developing reflexivity and critical reasoning is 'far more subtle, complex, disorderly and emotional […] than is currently implied' (Dyer and Hurd 2016: 288). This has led some scholars to argue that existing models of reflective practice are therefore outdated and unfit for purpose (Ryder and Downs 2022).

This line of argument has many implications for business schools and management education more broadly. There has been much written in recent years about the struggles of business schools to stay relevant and meet the needs of a changing marketplace (cf. Thomas and Ambrosini 2021). One particular issue is the fact that 'Pedagogies that discourage critical self-reflection may contribute to the inculcation of habits that favour hubris' (Sadler-Smith and Cojuharenco 2021: 274). There is also a growing body of work that suggests students need to be better prepared to embrace chaos and uncertainty (Bureau and Komporozos-Athanasiou 2017: 51). Indeed, Hibbert (2013) notes that students tend to favour familiar understandings and struggle to deal with radical alternatives to their unquestioned cultural norms (816); a point that supports Seaman's (2008) claim that these models derive from a particular ideological stance.

One of the major issues is that many of the most popular models taught in higher education – such as those described by Kolb (1984, 2015), Gibbs (1988) and Driscoll (1994, 2007) – do not place enough emphasis on context, and therefore do not put the practitioner at the heart of the cycle (Ryder and Downs 2022). As such, the practitioner (or indeed, student) becomes a passive observer as events unfold. There is also a tendency to favour short-term thinking as each 'event' is reflected on in abstract isolation.

Clearly, this issue has many implications, not least in terms of sustainability – the focus of this book. If students and practitioners are not suitably equipped to reflect in a way that situates themselves at the heart of the event that they are reflecting on, then they are less likely to envisage the potential long-term consequences and ramifications of their actions. They are also less likely to take positive action to operate in a more sustainable, more environmentally conscious way.

To address these problems, this chapter makes a case for adopting John Boyd's OODA loop as our new primary model for reflection. At its most simplistic level, OODA stands for Observe, Orient, Decide, Act. However, the concept is far more nuanced than its

acronym suggests. At its core, the OODA loop represents a philosophy that embraces chance and puts a strong emphasis on the role of 'orientation' as a key component that shapes how we see the world and the decisions that we make. By adjusting the way we teach reflection, and by moving away from the static models of the past, so we can help shape a new generation of practitioners going forward – practitioners who are critical, agile and reflexive, and who take a holistic view to self-reflection and how their actions relate to the world around them.

The climate emergency is *the* critical issue of our age. Only by changing the way we *think* – changing the way we *think about thinking* – will we be able to respond to the crisis and bring about real and sustainable change to the way our world works.

2 The Problem with Reflective Practice

The concept of reflective practice has been in use for the best part of a century, starting with Dewey (1933) and his work on reflective thinking in education. However, it wasn't until some fifty years later with the works of Schon (1983) and Kolb (1984) that the concept really began to take a hold. Schon in particular was instrumental in framing reflection as a key part of professional development, laying the ground for many of the theories of reflection that were to follow. These include the likes of Gibbs (1988), Driscoll (1994), Rolfe et al. (2011), and Jasper (2013) – works that are all still actively taught in the classroom and promoted by professional training providers.[1]

While each of these models has its own particular nuance and approach to reflection, they can be generalised as follows: 1. Something happens, 2. We reflect on it (in whatever way the model suggests), and 3. We take some form of action [see Figure 1].

[1] See for example Gibbs cited by NHS (2022) and Kolb cited in guidance for medical doctors and students (AORC et al. 2022). Private healthcare training providers such as HSCE (2022) also promote the cycles of Gibbs, Kolb, Rolfe et al. and Jasper (among other), as resources for professionals seeking to make use of reflective practice.

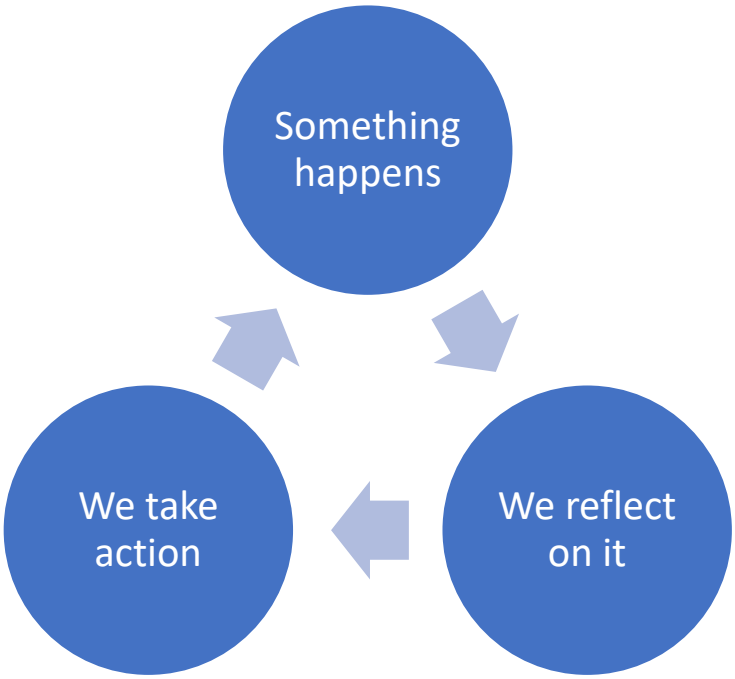

Figure 1 – A generalised view of reflective practice as popularised by Gibbs (1988), Driscoll (1994), Rolfe et al. (2011) and Jasper (2013)

What is notable about these models is that they each imply a certain linearity – that each event and action is related to the last. Crucially, they also fail to include the role of external factors in shaping what happens, how we reflect on it, and how we take action. Indeed, none of the established models – including Kolb (1984, 2015) – puts sufficient emphasis on the role of the person doing the reflecting as a central part of how the cycle operates and how each part of the cycle plays out.

This is a vital absence from established models as it means that as educators, we are teaching students (and therefore, future practitioners) to think in terms of isolated incidents without wider context. By doing this we risk oversimplifying the reflective process (Dyer and Hurd 2016), and thus inculcating habits that favour hubris (Sadler-Smith and Cojuharenco 2021).

3 OODA Loops and the Importance of Orientation

Given the long list of problems with our most popular models of reflective practice, this chapter examines the applications of a powerful alternative: John Boyd's OODA loop (Ryder and Downs 2022).

John Boyd (1927–1997) was an acclaimed pilot and military strategist who was at the heart of the US Air Force's Lightweight Fighter (LWF) programme in the 1960s. While he never published a full-length book, his theories and strategies exist as a series of slide presentations reproduced in digital format and preserved in online archives. Most important of these documents perhaps is 'The Essence of Winning and Losing', which Boyd delivered as part of a series of military briefings in 1995 and 1996. In it, Boyd gives a clear breakdown of the OODA concept, while also setting out the core of his philosophy around change and uncertainty.

At first glance, the OODA loop is a very simple concept. Its letters stand for: Observe, Orient, Decide, Act. However, it is far more nuanced than the acronym suggests. Figure 2 shows the OODA loop as depicted in Boyd's presentation. As the Figure shows, Orientation rests at the heart of the OODA loop, for it is Orientation that exerts implicit guidance and

control over Observation and Action, with feedback loops built into the OODA loop at every stage.

In this way, the OODA loop represents a significant advance on the likes of Kolb, Gibbs, Driscoll and Jasper. This is because it is a loop that never ends, with user Orientation *shaped by*, and *shaping*, interactions with the environment. Quite simply: it is an adaptive model that changes as the world around it changes too.

This is a significant step beyond how existing models conceive of reflection as if it is a discrete 'thing' that reflective practitioners 'do'. Rather, the cycle should become a part of the individual such that the cycle and the practitioner co-exist as one, shaping each other and developing together in turn.

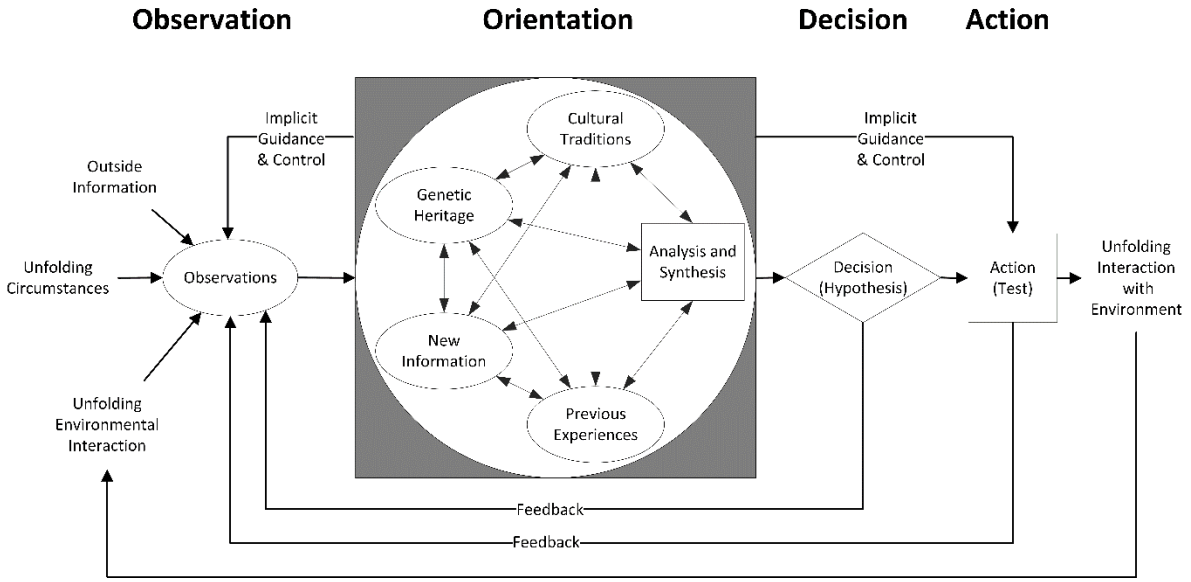

Figure 2 – John Boyd's OODA loop, adapted from 'The Essence of Winning and Losing' (Boyd 1995)

Embracing Change

Before moving on to the application of this theory to sustainability in education, it is worth pausing for a moment to consider the OODA loop in its wider context.

At its heart, the OODA loop is a form of mindset – a way of thinking about the world and our place in it. This is a point made by Boyd in 'The Essence of Winning and Losing' in which he prefaces his OODA loop design with a series of key statements that feed one into the other. For Boyd, it starts with all of the 'genetic heritage, cultural traditions, and previous experiences' that contribute to an 'implicit repertoire of psychophysical skills shaped by environments and changes that have been previously experienced' (1995: 1). These implicit skills and experiences then feed into how one goes about approaching a particular problem.

According to Boyd, it is critical to approach learning and reflection with an open mind, and not just to approach a problem from a standard or 'accepted' position. In many respects, counter-claims are just as useful as accepted norms as they challenge expectations; even in the process of rejecting them so further understanding can be gained. Indeed, Boyd argues that 'Without a many-sided, implicit cross-referencing process of projection, empathy, correlation, and rejection […] we cannot even do analysis and synthesis' (Boyd 1995: 1). And it is here, under the umbrella of analysis and synthesis that we evolve means by which to deal with unfamiliar phenomena and unforeseen change.

What makes the OODA loop such a powerful concept is the way that it embraces change as a key driver of any system. While many of our most popular models of reflective practice struggle in the face of an ever-changing and unpredictable world, Boyd's theory is designed to respond to change and use it as a means for development and growth.

But before we can embrace change, first we need to disavow ourselves of long-held notions of static models to describe the world. For Boyd, no framework can ever encapsulate reality. This is because entropy leads all static systems to eventually stagnate and decay (Bousquet 2009: 221). It is therefore wrong to think that any single model can fully represent the way the world works at any given moment. This is certainly true of the models of reflective practice discussed previously. After all, no two individuals have the same subjective experience, and there are many factors affecting the way we perceive events and interact with the wider environment.

In response to the 'problem' of change, Boyd extols a theory of agility, which requires practitioners prepare themselves to adapt to changing circumstances. Change shouldn't therefore come as a surprise, but rather as an expected step. Boyd's theory on agility is described by his former associate Chet Richards, himself a Maths PhD who worked with Boyd from the 1970s. Writing in his book *Certain to win* (2004), Richards observes: 'The essence of agility [...] is to keep one's orientation well matched to the real world during times of ambiguity, confusion, and rapid change, when the natural tendency is to become disoriented' (2004: 30). To do so requires a level of strategic oversight as to the end goal, or rather, the 'big picture'; it is not enough to treat events in isolation, but rather to adapt and change to unfolding circumstances while keeping the end goal in sight. The 'means' may change, but the end remains the same.

However, it is important to note that our ability to keep our orientation matched to the real world is largely a function of how well we observe (Richards 2004: 63) – which itself is shaped by orientation. The inter-relatedness of the various aspects of the OODA loop may seem complex at first glance, however, it is only by understanding the loops in context and gaining a 'fingerspitzengefuhl', or 'finger-tip feeling' (Boyd 1987: 45) for our own individual loops – our own individual context – and those of our 'adversaries' (in whatever form they take) that we can make best use of OODA loops as an effective means of reflective practice and self-improvement.

As Boyd argues: 'Without OODA loops embracing all of the above […] we will find it impossible to comprehend, shape, adapt to and in turn be shaped by an unfolding evolving reality that is uncertain, everchanging, and unpredictable' (1995: 1).

4 Putting Sustainability First

As we have seen, current models of reflective practice taught in universities and applied in a professional setting are outdated, inflexible and not suited to the modern world. They are essentially unfit for purpose (Ryder and Downs 2022). By embracing John Boyd's OODA loop theory, as educators, we can hope to situate our students (and therefore future practitioners) at the heart of reflection to take ownership of their reflection and their own personal context.

But how might this work in practice?

In Ryder and Downs (2022), my colleague and I propose sessions with students designed to encourage them to start thinking critically about their own particular context – about all the things that make them who they are – all the things that make them 'tick'. I have called this task 'Orientation-in-action', as the first step in any self-reflection should be to understand one's starting point before the reflection proper begins.

In my own teaching I often give a worked example based upon my own context and situation. I start by drawing a basic mind map with myself at the centre. I then add various

elements of my background that effect my position as observer. These include (but are not limited to): my childhood; where I grew up; my education; my political views; my personality; my personal philosophy; my (lack of) religion etc. The important point to note here is that this process should not be seen as a formal exercise in listing every single category and concept possible. Rather, students should be reminded that the process of unpicking one's Orientation is a journey of self-discovery – a process that is ongoing and will change over time.

I should also note that there is no 'right' or 'wrong' answer; there are many diverse things that shape our perspective on the world, and our Orientation can include things such as: the football team we support; whether we are a 'cat person' or a 'dog person'; our preferred taste in music; our favourite books. All of these things shape us in some way, and reflect who we are as individuals. For example, as a certified 'dog person', I value loyalty and friendship above the detached sort of self-interestedness of cats, and this plays out in the relationships that I form and the way I view other people.

Mapping out a diagram of all the things that make us who we are can take a little time depending on how it is presented to a class of students. However, it is really worth the time and effort as it gives students a sense that Orientation will be different for each and every person in the room. It also has the added benefit of instilling some much-needed authenticity in the delivery of teaching – to show that as teachers, we are real people with real lived experiences and a connection to the real world (c.f. Rogers 1969; Cranton 2001, 2006a, 2006b; Kreber 2013).

Once this first example has been worked through, the next step is to get students to reflect on their own Orientations and compare it with others sitting around them. This is a useful way to get conversations working in the class and to encourage further critical self-reflection. It may also lead to discussions where students start to think about how they reflect in different ways. For example, someone who grew up in a rural location may discover they are more self-sufficient and willing to travel than someone who grew up in a city, or who went to boarding school. Equally, it may be that people with large, close-knit families find that they are by nature very loyal, and place great weight on inter-personal relationships and commitment to the group. This may differ from someone who is an only child who has grown up without those ties.

This session offers many possibilities for further development. For example, instructors may choose to spend some time offering up scenarios for students to consider, wherein they may have different perspectives on an event. This can be used as a way to encourage students to reflect back upon why they responded to the scenarios in a particular way – what from their personal orientation may have caused them to take the perspective that they did.

Once students have completed their initial reflection on their personal Orientation, tutors may choose to look at specific facets of Orientation in turn. For the purpose of this chapter, I will focus specifically on sustainability, as it is such a key facet of modern life, with a marked increase in sustainable lifestyles (Deloitte 2022).

In the first instance, a similar mind-mapping exercise might be started by placing sustainability at the centre of the map, and expanding the diagram with the various elements that students understand to relate to the subject. They should do this individually in the first instance. However, this is just the starting point. Students should *then* be encouraged to think about how these various elements of sustainability and/or sustainable practice impact on their own personal decision-making specifically. For example: Do they always recycle their coffee cups? Do they make efforts to turn off lights and other devices when they are not in use? How often do they drive a car on journeys of less than a mile?

The aim here is not to single out students who may behave in ways that defy established norms, but rather to facilitate conversation that leads to meaningful reflection on how and why they behave in the way that they do. This is the first step in bringing about change.

To give a worked example: in my own context, my grandparents were from the East End of London and were stereotypical Londoners of a certain vintage. Their 'blitz spirit' stuck with them throughout their lives – as did their attitude to waste, and their desire to 'make do and mend' rather than buy things anew. This background gives a context to my own views on waste. I don't like to buy new things unless I absolutely have to, and I am a very keen recycler; I don't like things going to landfill. This is reflected in my buying habits and my approach to shopping. It also impacts the way I look after my money, and the way I interact with others.

But while we can perhaps all agree that recycling is generally a good thing, it is not something we all view in the same way. Therefore, if we are to instil a sustainable mindset in our students, we need students to reflect on *why* they behave in certain ways as the first step to bringing about change.

In my own case, I sometimes persist in using worn-out items to the detriment of my personal comfort. My natural inclination to avoid spending money on myself also means I may not check where products are sourced when I purchase new clothes; I tend to prioritise function over anything else. This is something I recognise that I need to spend more time on when buying clothes, even though my natural inclination is to minimise the time I spend shopping wherever possible.

This simple example hopefully goes to show how reflecting on one's personal Orientation can start to unpick some of the many complex facets that feed into the ways that we behave in the ways that we do. Of course, there is no simple solution here – each person will work in a different way – however, it is only by first taking a step back to consider where we come from that we might then start to think about where we are now, and where we want to be. This is the power of John Boyd's OODA loop theory: as the system (i.e. the world) is constantly in flux, we therefore need to adopt a flexible, fluid mindset, and move away from the idea that we are fixed beings incapable of change. To do this, we first need to understand what it is that makes us who we are and see the world in the way that we do. Only then can we open doors to a more sustainability-focused way of living.

5 Adopting a Sustainability Mindset

There can be no doubting the world is in a global environmental crisis (UN Environment Programme 2022; United Nations 2022; World Health Organization 2022; UNICEF 2015). With this in mind, I propose re-framing Boyd's OODA loop concept to explicitly include its relationship with the wider world. This context is absolutely critical as each and every element in the loop is related to and relies upon the global environment, and there being a global environment left for us to prosper in.

While experienced advocates of Boyd's philosophy will already understand the role of feedback mechanisms and external factors in shaping Observation, Orientation, Decision and Action, the theory has at times been over-simplified and mis-interpreted by some scholars who perhaps do not understand the nuance of Boyd's argument (cf. Rogers 2010). This can lead to the mistaken assumption that 'success' is merely a process of completing the loop faster (Osinga 2007: 5–6; cf. Papenfuhs 2012; Maor 2022). For this reason then, I propose that global context, or more specifically, *global environmental context* should be stated *explicitly* as the context within which all loops operate (see Figure 3).

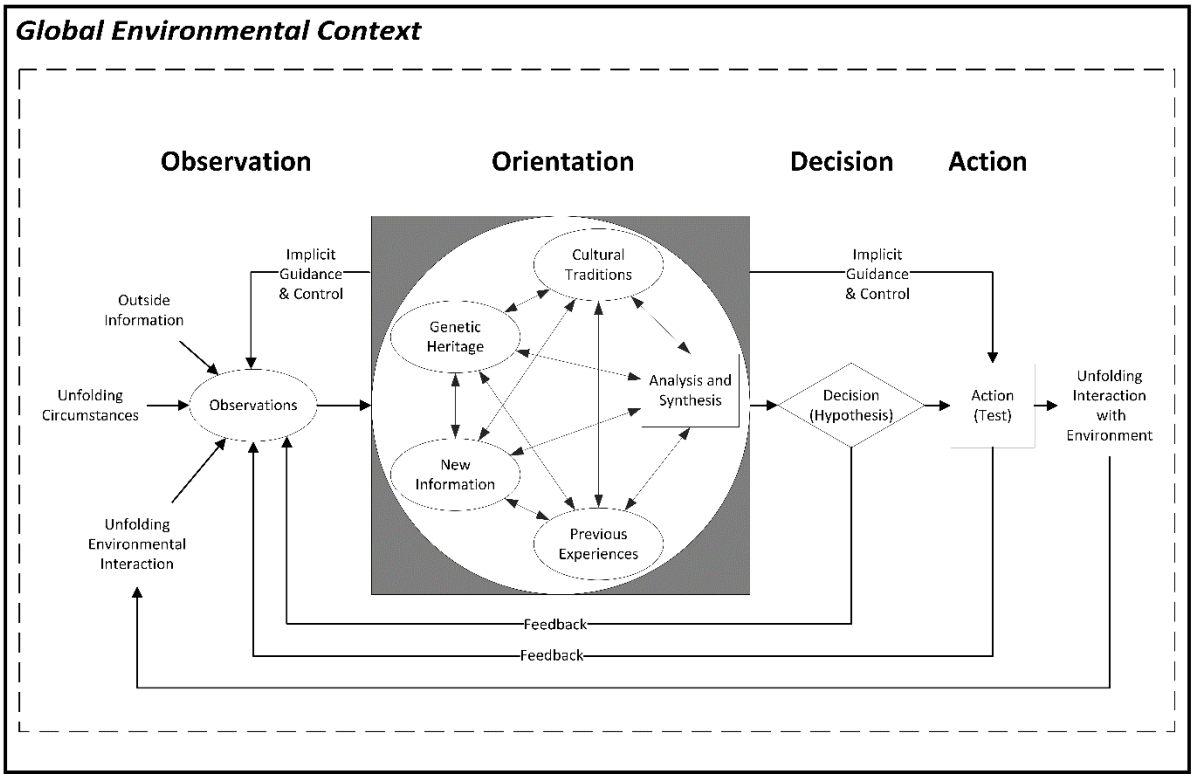

Figure 3 – OODA loop operating within the global environmental context

Starting on the left-hand side of the diagram, Observation should be considered in terms of its relationship with the global environment. What one perceives to be 'sustainable' or 'ethical' is of course shaped by Orientation; and yet one needs to be prepared to adjust observations based on environmental context. From this, we make a decision, which itself shapes observations and is tested through action – all of which we might then lead to unfolding interaction with the environment, which again, exists within the context of the global environmental context.

To give an example: over the period of Christmas 2022, UK Conservative MP and Environment Minister Rebecca Pow shared a video on Twitter in which she encouraged her followers to iron their used wrapping paper in order to re-use it for future gifting (Pow 2022). While clearly well-intentioned, the video focuses on only one aspect of sustainability to the exclusion of others. In this case, Pow's message promotes re-use – a positive message – while at the same time using a seemingly disproportionate amount of energy to heat an iron. It is perhaps no surprise then that Pow's video came in for much criticism, especially at a time when so many people in the UK are struggling to pay their energy bills (cf. Brazell 2022; Yadav 2022).

While it is hard to compare two different forms of consumption (buying new wrapping paper vs heating an iron), as critical reflective practitioners we need to consider all of the factors at play, while also appreciating how our own observations shape our reflections on the event being observed – not just for ourselves, but also for others. In this case, we need to factor in how our own political leanings may shape the way we instinctively respond to Pow's post. This includes the party we support, our class allegiances and our opinion of UK politicians. It also includes our understanding of the many complex issues involved in the sustainability (or otherwise) of wrapping paper such as its cost, where it is made, how easy it is to recycle, and so on.

Putting the political issues to one side, Pow's video reveals something of the tension at the heart of decision-making, especially when it comes to making choices around sustainability. This is because there is always a certain 'opportunity cost' associated with any decision as every action comes at the expense of acting in a different way. In this case, either we iron wrapping paper so as not to buy new wrapping paper, or we buy new wrapping paper so as not to iron old wrapping paper.

What this example goes to show is that not everyone has access to the information or insight to weigh up the environmental impact of two quite different activities (even though an Environment Minister really should know better!) Unfortunately, there is no clear and easy answer to this conundrum. While researchers such as Mike Berners-Lee (2020) have attempted to shed some light on picking more environmentally-friendly options, this information is not readily available to everyone, and some facets of the sustainability agenda may have passed some people by.

We might also reflect on the fact that even the best studies have their limitations. As Berners-Lee himself would admit, we cannot know the exact carbon cost of everything, as the world is just too complex a place. While cycling to work is typically better for the environment than say, taking the car, the impact of this activity is limited if the cyclist eats a lot of red meat and rides a bike imported from China. The alternative might be to get the bus, but if the bus is empty then that's a lot of excess fuel being burnt to transport a single passenger plus the driver. Another option may be to stay at home; however, working from home burns extra energy for things such as heating and lighting; plus, the carbon costs associated with new electronic equipment such as monitors, laptops (etc). This makes the decision-making process very difficult indeed.

While there may be no clear 'right' or 'wrong' answer in this situation, as reflective practitioners we need to be able to embrace the complexity of the situation, and the fact that the situation could potentially change in the future. We also need to consider how our personal Orientation shapes how we perceive and respond to the event. By first understanding ourselves and the way we see the world, we can make better, more environmentally-conscious decisions. We should also seek to pro-actively adapt our Orientation as we receive new information.

6 Conclusions

Clearly, reflective practice has an important role to play in education as we help to shape the leaders and decision-makers of tomorrow. However, the models that we teach currently are not well adapted to the modern world. A key reason for this is that they are rigid in structure and do not sufficiently consider context and the role of the individual in shaping how reflections are carried out in the first place. Crucially, they do not sit in relationship with a wider global environment – a factor that is ever important as we face an unprecedented climate emergency.

To respond to these challenges, we need to adapt our way of thinking. We need to think more creatively, more flexibly, more critically. The model I suggest for doing this is John Boyd's OODA loop (1995). While no single model can ever reflect the complexity of our modern world, Boyd's OODA presents a new way of thinking about the world and our relationship with it. While most other models of reflection are static in nature and rigid in their approach, the OODA loop is designed to adapt and change as the world changes about it. By considering Boyd's OODA loop within the global environmental context, I propose that educators, students and practitioners more broadly can better equip themselves to confront the challenges the climate emergency brings.

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