

The importance of building teachers' intrinsic control into the design of professional development (PD) programmes

Mike Cole

Department of Social Work, Education and Community Wellbeing, Northumbria University, Newcastle upon Tyne, UK

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ABSTRACT

Professional development (PD) programmes take a wide variety of forms. Lloyd and Davis (2018) present a model to map the diversity of PD programmes based on the extent to which intrinsic control of learning was afforded to the teachers by the PD. In this study, Lloyd and Davis's model was applied to map two different PD programmes. Both programmes aimed to achieve similar outcomes, they ran over a similar timeframe of 2 years, and both were targeted at early career teachers (ECTs). Yet, despite these similarities, the ECTs mapped the programmes differently onto the model, and the extent to which the programme outcomes were achieved also varied. The degree to which ECTs considered that the PD afforded them a sense of control and an influence over the direction of their learning was found to be associated with the extent to which the intended programme outcomes were met. Building in an optimal balance of autonomy supportive opportunities into PD programmes is likely to be an important feature of their success.

Introduction

Teachers' professional development (PD) is packaged in a wide variety of forms, and the diversity of opportunity is summarised by Day: [PD is] . . . all natural learning experiences and those conscious and planned activities which are intended to be of direct or indirect benefit to the individual, group or school, which constitute, through these, to the quality of education in the classroom. It is the process by which, alone and with others, teachers review, renew and extend their commitment as change agents to the moral purposes of teaching; and by which they acquire and develop critically the knowledge, skills and emotional intelligence essential to good professional thinking, planning and practice with children, young people and colleagues throughout each phase of their teaching lives. (Day 1999, p. 4) [PD is]

PD can range from short courses to longer accredited programmes. However, there is a general consensus that to be effective, PD should be sustained, provide opportunities for collaboration, and develop the knowledge, skills, and ideas that meet teachers' needs and be relevant to them at that point in time (Day 1999, Guskey 2000, 2002, Adey 2004, Cordingley et al. 2005, 2007, Ratcliffe and Hanley 2005). Within the various definitions and suggested models of effective PD, it is the teachers taking part in the PD, who have the capacity to act as the enablers of change (Brown and McIntyre 1982, Common 1983, Fullan 2006, Grove 2008) and so act as the ultimate mediators of change to their classroom practices and to improvements in pupils' learning.

In order to ensure teachers can act with agency and enable change, they must be given the space to do so (Priestley *et al.* 2015) and their self-determination must be supported (Deci and Ryan 1985, 2002). Whilst opportunities can be built into PD programmes to allow teachers to focus on issues and areas of interest that are relevant to them, wider educational policy can also frame what counts as relevant and important and can therefore influence the sorts of PD foci that are valued. This context therefore has the opportunity to enable or constrain teacher agency (Priestley *et al.* 2015).

For the purposes of this study, two long-term PD programmes – each running over the course of 2 years and each aimed to focus on and support the needs of teachers at the beginning of their careers – were mapped in terms of the extent to which they supported participants' intrinsic control of their professional learning. Early career teachers' (ECTs) perceptions of the impact on their learning and on practice as a result of their engagement with the PD programmes were also explored. The aim was to establish whether there was a connection between intrinsic control and magnitude of reported PD outcomes, which might be expected within a framework of self-determination theory (Ryan and Deci 2000).

This study involved a group of ECTs, who had recently successfully completed their initial teacher training year and had been recommended for qualified teacher status. They were simultaneously engaged with two PD programmes – a postgraduate diploma in education and the early career framework.

I will first outline the key features of each of these PD programmes, as relevant within a framework of self-determination theory (Deci and Ryan 1985, 2002), highlighting similarities and differences between the two programmes. The PD programmes will be referred to as PD(A) and PD(B). This way the focus of discussion will remain on features of the programme characteristics – within a context of self-determination theory – as opposed to discussion of the exclusivity of the actual PD programmes.

PD(B) sets out an 'entitlement for 2 years of PD designed to help ECTs develop their practice, knowledge and working habits' (DfE Early Career Framework 2019). More specifically, it sets out a framework of five core areas, presented in eight sections for ongoing development, which aligns with and builds upon the DfE Teachers' Standards (DfE ITT Core Content Framework 2019). PD(A) is also a 2-year long programme, which similarly aims to enhance teachers' knowledge of evidence-informed practices, as well as their understanding and skills required to implement those practices in the classroom. Both programmes have similar support structures in terms of access to mentors and tutors to guide participants' progress through the programmes.

However, although similar in a number of respects, particularly in terms of the overarching intentions to support ECTs to become highly effective classroom practitioners, there are differences between the two programmes. PD(A) is a university-validated programme, with accompanying assessment requirements. PD(B), funded by the Department for Education, is itself neither an assessment framework nor an assessment tool (DfE ITT Core Content Framework 2019) but is a 2-year entitlement for teachers that ‘underpins what all ECTs should be entitled to learn about and learn how to do based on expert guidance and the best available research evidence’ (DfE ITT Core Content Framework 2019, p. 5). PD(A) similarly extols the value of the research evidence base – the programme has been designed to complement, deepen and extend participants’ evidence informed practice. However, a point of note is that there is an explicit expectation that PD(A) participants will develop areas of expertise **and interest**, provoked by prior experience, wider reading, school experiences, or research and taught sessions (PD(A), Programme Guide)). This subtle difference in emphasis in terms of the way in which participants are positioned and expected to engage with the programme content may be important in terms of what they achieve.

This study began before the publication of (DfE Evaluation of the national roll-out of the early career framework induction programmes Interim research brief (year one) (2022)) interim evaluation of PD(B), the OFSTED monitoring visits (OFSTED 2022), the PD(B) Teacher Tapp Survey (Ford *et al.* 2022), and UCET’s report of the Department for Education in support for the continuing PD of teachers (Vare *et al.* 2022). For all but one of the PD(B) providers inspected by OFSTED in the Lead Provider monitoring visits between September 2021 and August 22, it was noted that ‘Leaders and those responsible for governance are taking effective action towards ensuring that the [PD(B)] training is of a high standard’ (OFSTED 2022). The interim research briefing (DfE Evaluation of the national roll-out of the early career framework induction programmes Interim research brief year one 2022) reported that overall participants were positive and satisfied with the provider-led PD(B) training and placed value on the support of high-quality mentoring. However, in a survey of ECTs 1 year into PD(B), Ford *et al.* (2022) found that 65% of primary mentors and 49% of secondary mentors considered that PD(B) did not meet an individual teacher’s needs, with 46% of primary and 60% of secondary mentors stating that PD(B) was not subject specific enough (Ford *et al.* 2022, p. 4). Just 2% of mentors and 4% of ECTs surveyed responded that the study materials were specific to subject or phase (Ford *et al.* 2022, p. 1). Only 11% of ECTs said that the self-study materials met their needs, and 19% agreed that the training had met their needs (Ford *et al.* 2022, p. 8). In terms of the self-study materials, only 12% ECTs felt that these were applied to their context, with only 17% agreeing that the training had (Ford *et al.* 2022, pp. 7–8). In addition, issues of flexibility were noted in the DfE’s commissioned interim research briefing of PD(B), in which the authors noted that ‘27% of ECTs rated the tailoring of the provider-led PD(B) based training to their school context and ECTs needs, as poor (very poor or fairly poor)’ (DfE Evaluation of the national roll-out of the early career framework induction programmes Interim research brief year one 2022, p. 15). These tensions were noted in the report: Lead providers were concerned about delivering flexibilities for participants. They noted how provider-led [PD(B)] based training must deliver a consistent offer and programmes must meet a set of essential criteria, but this can lead to the training feeling rigid. Flexibilities are therefore considered critical for the engagement of participants, and this creates some tension between adherence to principles (and required metrics) of provider-led [PD(B)] based training whilst dealing with the day to-day realities of teaching and the needs of the broad spectrum of schools, mentors and ECTs. (DfE Evaluation of the national roll-out of the early career framework induction programmes Interim research brief year one 2022, p. 16)

By autumn 2023, Ofsted had completed full inspections of all six lead providers, and each lead provider received either a good or outstanding inspection grade. A range of strengths relating to the curriculum, the support structures, and its implementation had been highlighted (Ofsted 2023).

The PD(A) and PD(B) are well aligned in that they aim to support teachers’ PD at the very earliest stages of their careers. Thus, there is common ground in terms of the goals of each programme, notably to ensure that teachers have sufficient knowledge and skill to become effective classroom practitioners. The beginning of a teacher’s career has long been recognised as a crucial point for PD (Ball and Goodson 1985), as teachers work within a complex socio-political network (Priestley *et al.* 2015), yet must engage in iterations of enaction and reflection of their personal professional practice

(Clarke and Hollingsworth 2002) in the contexts within which they work. PD(B) recognises teachers as the 'foundation of the education system' (DfE ITT Core Content Framework 2019), and the PD(A) recognises teachers as mediators of change.

As a way of capturing participants' views of the extent to which they perceived the direction of professional learning to be under their intrinsic control or externally driven, Lloyd and Davis's (2018) pragmatic model of teacher professional learning was used to support data collection. PD participants' views of the extent to which programme outcomes were manifest were also gathered and were then tested for associations with their perceived level of intrinsic control of learning.

This study is not an evaluation of PD(A) or PD(B). The programmes were selected because of the similarities in their aims, support structures, as well as their subtle differences: from the outset PD(A) made explicit specific reference to supporting participants' personal professional interests.

An aim of the study was therefore to establish whether, in practice, participants themselves actually observed any differences in the locus of control of their learning between the programmes, and if so, whether this may offer insight into any possible relationship with the extent to which intended learning outcomes were achieved.

Theoretical framework and context

Lloyd and Davis, in recognition of the diversity of the PD landscape, proposed a model for mapping the characteristics of PD along three continua, modelled on Bourdieu's notion of Social Capital (Lloyd and Davis 2018):

The domain of influence provides a continuum on which participants can grade the extent to which they consider that professional learning on the programme is fully directed or fully self-identified (Continuum D).

The sphere of action allows participants to grade the extent to which professional learning occurs in formal arrangements or informally (Continuum F).

The autonomy–transformation continuum participants rate the extent to which their engagement with learning materials during the programme is guided by mentors or tutors, or driven purely by their own individual motivations and interests (Continuum G).

By intersecting the three continua, plotting positions on each individual continuum relating to each PD programme; and joining each plot, a space becomes occupied on the map, as illustrated in Figure 1:

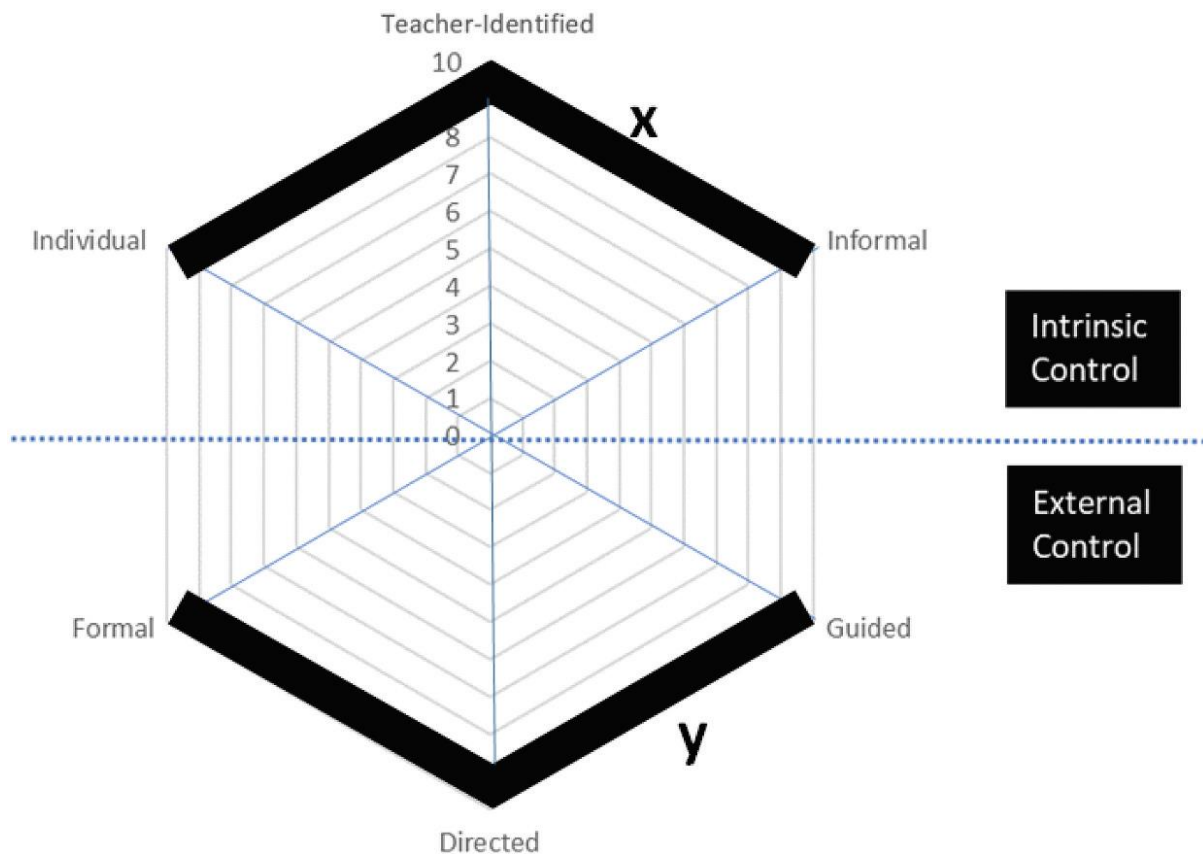


Figure 1. A map of two contrasting PD programmes (x and y). Note. x: PD considered to provide high levels of intrinsic control. y: PD considered to provide low levels of intrinsic control but high external control.

The programmes positioned most closely to the directed, formal and guided ends of the continua would be characteristic of PD programmes with high levels of external control over the professional learning. Programmes mapped nearer the informal, individual, teacher-identified ends of the continua are more characteristic of programmes supportive of higher levels of intrinsic control (Lloyd and Davis 2018). This study builds on Lloyd and Davis's work, adding insight as to whether two PD programmes, each with similar goals, would be mapped differently by the participants themselves, and if so, whether the perceived differences are associated with any differences in the extent to which learning outcomes are enacted, as reported by the participants.

Different PD programmes may prescribe different forms of effectiveness (McLennan *et al.* 2021), but there are many similarities between the PD(A) and PD(B) in terms of the intended aims and objectives, as well as similarities in the organisational structure: both have explicit training, mentoring, and self-study materials, but there may also be some potentially important differences. PD(B) is framed in terms of teachers needing to 'learn that' and to 'learn how to', whilst PD(A) also supports trainees' development in relation to these areas, trainees are positioned within a broader programme and a module level framework, which explicitly aims to support trainees' personal professional interests – as captured in the programme learning objective: [PD(A) will] 'develop areas of expertise and *interest* [emphasis added]; these may be provoked by prior experience, your wider reading, by school experiences or by university assignments, research and taught sessions.

This programme objective could be important in terms of the extent to which teachers feel that their autonomy is supported within the professional learning process, as engagement and the direction of learning infers a level of ownership and responsibility on behalf of the teacher, in terms of the specific

areas and foci selected for development. When positioned within the framework of self-determination theory (Deci and Ryan 2002), it may be hypothesised that participants, who experience PD programmes that they perceive to be supportive of their intrinsic control as opposed to exerting external control over their learning, are likely to persevere, and engage more purposefully, and productively with this (Deci and Ryan 2002). It follows that teachers' views of the extent of the subsequent impacts of the PD may also be more positive as the results gained through these iterations of enaction and reflection may support teachers' views of the value of the PD experience (Guskey 2000, 2002, Clarke and Hollingsworth 2002).

Methods

A group of participants were employed as ECTs, and they were engaged with both programmes and so had current first-hand experience of each. Questionnaires were issued part way through each of the programmes, so that information was gathered during a time at which participants were actively engaging with the content.

The questionnaires comprised two sections. The first gathered information in relation to programme characteristics, rated along three continua, each on a 20-point scale: Participants were asked to rate the extent to which their professional learning on each of the programmes was:

- (A) Fully directed (or teacher-identified).
- (B) Completely formal (or completely informal).
- (C) Totally guided (or totally individual).

This allowed data to be plotted on the chart of the intersects of the continua (Figure 2).

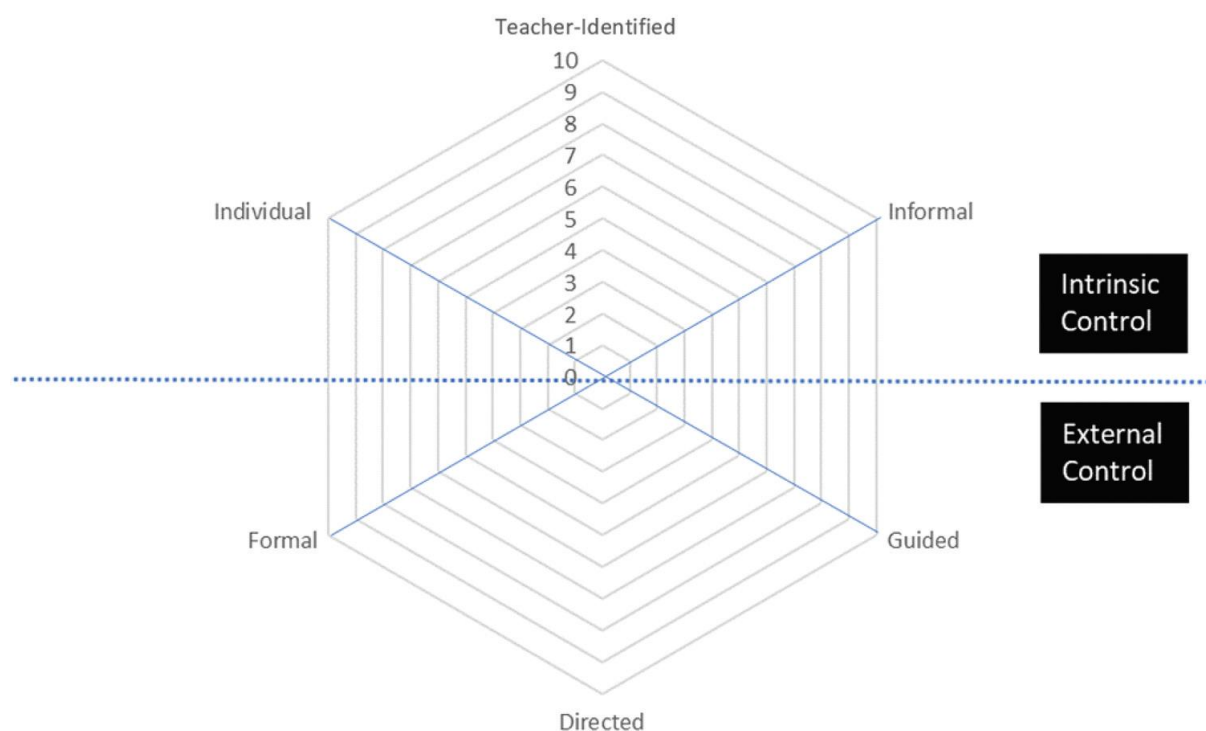


Figure 2. Chart used to map the two PD programmes.

The second section of the questionnaire comprised questions relating outcomes that were common across both programmes, graded on a 5-point Likert scale.

Specifically, the questionnaires sought information about the extent to which the participants felt that each programme had supported them to:

- (a) Become a highly effective practitioner.
- (b) Become a highly reflective practitioner.
- (c) Become capable of making significant contributions to the workplace.
- (d) Become a leader of learning in my classroom.
- (e) Work constructively with others in differing contexts.
- (f) Deepen and extend my evidence-informed practice.
- (g) Respond to recent and relevant education research, current theories and professional debate.
- (h) Develop areas of expertise.
- (i) Develop areas that are of personal interest.
- (j) Support all pupils to succeed, widening access for all pupils.

Differences in average scores in responses between the programmes were compared, but also statistical significance tested between matched pairs across PD(A) and PD(B). Bivariate analysis was used to test for associations between each of the continua and the magnitude of the reported outcomes. Finally, regression analysis was used to establish whether the variance in outcomes was explained by the three continua.

Eighty-four ECTs were invited to complete a questionnaire to gather their views on the characteristics of PD(A). Seventy-two (86%) of the ECTs completed the questionnaire. Several months later, the same group of 72 ECTs were invited to complete a second questionnaire to elicit their views on characteristics of PD(B). Twenty-three (32%) of ECTs who completed the first questionnaire completed the second questionnaire. This low number of responses to the PD(B) questionnaire may be accounted for, in part, by the fact that requests to complete questionnaires were sent via email, as opposed to the PD(A) questionnaires which were completed following participants attendance at workshops that were running on campus at the time.

Findings

The plots of responses to characteristics of PD(A) and PD(B) were found to occupy different spaces on the chart (Figure 3). Overall, PD(A) responses were situated in a position on the chart indicating that participants' learning was on balance more under their intrinsic control, than under external control. With regard to PD(B), participants responses suggested that professional learning, overall, was influenced more through external control, than intrinsic control.

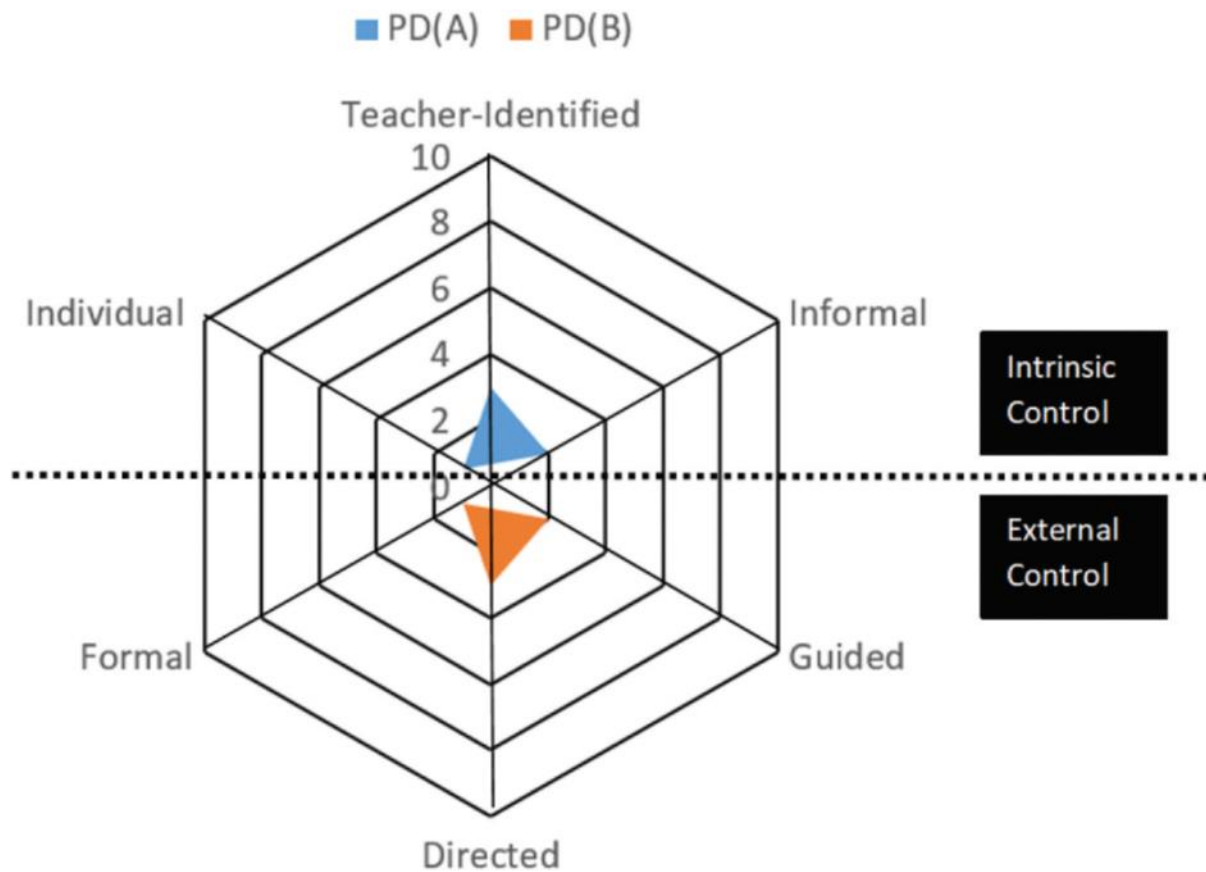


Figure 3. Mapping responses on the three continua.

However, it is clear that differences between the two plots are quite subtle, in that neither of the plots are at the extreme ends of the spectrum – they are both near the mid-range of each continuum. Overall, participants do not consider that the learning on either programme to be completely intrinsically or externally controlled. The average raw scores are given in Table 1, and the raw differences between average scores on the two programmes are also given.

Table 1. Differences in responses to the three continua across the two programmes.

	PD(A) (n=72)	PD(B) (n=23)	Scale Difference	Paired Sample t-test (n=23)
Continuum D: Directed to Self-Identified	3 (Self-Identified)	3 (Directed)	6	<.001
Continuum F: Formal to Informal	2 (Informal)	1 (Formal)	3	.125
Continuum G: Guided to Individual	1 (Individual)	2 (Guided)	3	.092

The largest difference in scores can be seen on the directed to self-identified continua, with participants considering that learning overall on the PD(A) is more self-identified than directed, with

the opposite view held regarding PD(B). These two PD programmes, each with similar objectives, and similar support structures, were perceived to have different characteristics relating to an individual's intrinsic and external control of their professional learning. Statistical significance between responses was explored using a paired t-test. Results are shown in Table 1.

The paired t-test was selected as part of the analysis, in recognition that the response rates to the PD(A) and PD(B) questionnaires were different. In an attempt to potentially minimise bias in the PD(B) sample, the matched pair t-test allowed comparison between individuals who had completed both questionnaires.

The paired sample t-test identified statistically significant differences between responses on Continuum D: the extent to which teachers considered that the professional learning was self-identified as opposed to directed. No statistically significant differences were found in the sample between the two PD programmes on continua F or G.

The next stage of analysis was to establish whether there were any correlations (Spearman's rho) between Continua D, F, and G and the reported outcomes. Statistically significant correlations were found between Continuum D, the directed to self-identified continuum, and the extent to which outcomes were achieved – across the full range of outcomes. There were also associations between Continua F and G for a small number of outcomes – indicated in Table 2.

Table 2: Correlations (Spearman's rho) between Continua D, F and G, and Outcomes (n = 95).

	Outcomes The programme helped me:	Continuum D: Directed / Self Identified		Continuum F: Formal / Informal		Continuum G: Guided / Individual	
		CC	Sig.	CC	Sig	CC	Sig.
a.	To become a highly effective practitioner.	.438**	<.001	.020	.844	.071	.494
b.	To become a highly reflective practitioner.	.355**	<.001	.187	.069	.084	.418
c.	To become capable of making significant contributions to the workplace.	.316**	.002	.065	.530	.174	.093
d.	To become a leader of learning in my classroom.	.483**	<.001	.163	.115	.259*	.011
e.	To work constructively with others in differing contexts.	.317**	.002	.147	.154	.200	.052
f.	To deepen and extend my evidence-informed practice.	.303**	.003	.213*	.039	.165	.110
g.	To respond to recent and relevant education research, current theories and professional debate.	.208*	.043	.292*	.004	.099	.340
h.	To develop areas of expertise.	.309**	.002	.150	.148	.178	.084
i.	To develop areas that are of interest to me	.367**	<.001	.190	.066	.209*	.042
j.	To support all pupils to succeed, widening access for all pupils.	.241*	.019	-.008	.936	.039	.710

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

Participants who reported experiencing higher levels of self-identified learning were also more likely to report higher levels of agreement with the extent to which the PD supported them to become highly effective practitioners, highly reflective practitioners, to deepen and extend their evidence-informed practices, to work constructively with others, and to become capable of making significant contributions to the workplace, as well as supporting all pupils to succeed.

The final stage of analysis, as outlined in Table 3, established the extent to which a model comprising the three continua could explain variation in outcomes. Given that the dependent variables, the PD outcomes provided ordinal data, the polytomous universal model (PLUM) analysis was used in SPSS to test whether regression models comprising data relating to the three continua predicted outcomes. Data relating to each of the three continua had been collected using a 20-point scale. For the purposes of the regression analysis, the data relating to each of the three continua were re-coded for each participant, as 1 or 0, depending on whether the position on each continuum was situated more in the domain of 'intrinsic control' (1), or within extrinsic control (0). Given the size of the sample, this helped to reduce any independent variable cells being incorporated into the analysis with zero frequency.

Table 3: Regression Models of programme characteristics (three continua) and outcomes (n=95).

Independent Variables /Predictors: Continua D (Domain of Influence), Continua F (Sphere of Action), Continua G (Autonomy-Transformation)							
Outcomes The programme helped me:		Model Fit		Goodness of Fit		Parameter Estimate (Continua, A, B, or C).	
		Chi-Square	Sig	Pearson	Deviance	Continua	Sig.
a.	To become a highly effective practitioner.	13.884	.003	.720	.514	D	<.001
b.	To become a highly reflective practitioner.	17.653	<.001	.072	.171	D F	.003 .003
c.	To become capable of making significant contributions to the workplace.	7.856	.049	<.001	.012	D	.002
d.	To become a leader of learning in my classroom.	17.276	<.001	.006	.102	D	<.001
e.	To work constructively with others in differing contexts.	16.886	<.001	.062	.105	D	<.001
f.	To deepen and extend my evidence-informed practice.	12.462	.006	.156	.127	D	.012

g.	To respond to recent and relevant education research, current theories and professional debate.	13.404	.004	.299	.140	D F	.004 .041
h.	To develop areas of expertise.	15.101	.002	.091	.366	D	<.001
i.	To develop areas that are of interest to me	21.220	<.001	.001	.053	D	<.001
j.	To support all pupils to succeed, widening access for all pupils.	3.338	.342	.077	.083		

and G), provides a better fit than the baseline model (containing no predictors), with the exception of outcome j. The goodness of fit provides two measures which compare the actual outcomes for each participant with the values predicted by the model. In these instances, results which indicate no statistical significance provide an indication that there were no statistically significant differences between the predicted and actual results. Non-significance, in this case, therefore, suggests that the model fits the data well. It can be seen that there are three instances (outcomes c, d, i), where goodness of fit measures indicate statistically significant differences between actual and predicted results. On occasions then, the model fit data and goodness of fit data provide some contradictory information. Whilst the model fits the data better than the baseline model, it still does not predict these three (c, d, i) outcomes particularly well. However, when Parameter Estimate data relating to each of the categories for each the independent variables is taken into account – within this model only two categories for each independent variable were used 1 or 0 – the model indicates that the position on Continuum D was significantly related to the responses on all but one of the outcome variables (outcome j is the exception).

The model fit and goodness of fit align with the following outcomes:

- To become a highly effective practitioner.
- To become a highly reflective practitioner.
- To work constructively with others in differing contexts.
- To deepen and extend my evidence-informed practice.
- To respond to recent and relevant education research, current theories and professional debate.
- To respond to recent and relevant education research, current theories and professional debate.
- To develop areas of expertise.

Model fit and goodness of fit does not align for the following outcomes:

- To become capable of making significant contributions to the workplace.
- To become a leader of learning in my classroom.
- To develop areas that are of interest to me.

However, the position of Continuum D was statistically significantly related to these responses. The extent to which participants consider there is scope to influence the direction of their learning has emerged as an important predictor in explaining the variation in the extent to which PD outcomes were achieved.

Open-ended survey questions asked participants to reflect on their experiences of engaging with each of the two programmes and sought to elicit their views on the importance of influencing the direction and the focus of their own professional learning. Responses suggested that the ability to influence the

direction of personal professional learning is highly valued by ECTs. The responses below illustrate a range of the reasons given:

'Knowing where my areas of development are . . . is key to be able to decide where to focus for my development'.

'[Important] to pursue own route in teaching that reflects values and interests'

'So that learning is related to my school context'.

'I like picking my own area of focus, develop it, to desired extent and move on to next'.

'I'd like to be independent in some areas of my practice'.

'So I can make it relevant to my school context'.

'It's the only way to keep it relevant to different school circumstances'.

Discussion and conclusion

Two different, but related PD programmes, have been mapped – by course participants – to indicate the level of internal control participants consider that they had over the direction of their professional learning.

Each programme occupied a different space on the model, indicating that teachers considered that the two PD programmes had different characteristics in terms of the extent to which professional learning was under internal, as opposed to external control.

Based on the findings of this study, differences in how teachers described their level of control over their professional learning experiences was associated with statistically significant differences in the magnitude of PD outcomes reported. It is important to recognise that although, on average, participants considered learning on PD(A) to be more self-identified than directed, with the opposite the case for PD(B), these average scores were not at the extreme ends of the continuum, but positioned towards the middle part of the spectrum, indicating an interplay between intrinsic and external control. It may be that the importance of the balance between self-identified and directed learning changes as teachers progress through their careers and become more established (Ball and Goodson 1985). These associations are likely to be important to consider in terms of PD design.

The findings resonate with research on teacher agency (Priestley *et al.* 2015) and self-determination theory (Deci and Ryan 1985, 2002), in that those who experience higher levels of autonomy and influence over the direction of the PD are more likely to report more positive programme outcomes. This of course is a careful balance in terms of providing a sufficient substantive programme structure, with adequate flexibility for teachers to direct their own learning towards personal professional needs and interests, reflecting specific aims valued by the teachers.

As outlined at an earlier point in this paper, this study is not an evaluation of the quality of either PD(A) or PD(B). It is intended to explore whether certain characteristics of the PD programmes may contribute to teachers' perceptions of achieving successful programme outcomes. The opportunity for teachers to identify areas of focus may be a powerful mediator of the ways in which participants interact with PD and enact subsequent actions and outcomes. This point is reflected to some extent in one of PD(A)'s descriptors: [Participants will] 'develop areas of expertise **and interest** [emphasis added]; these may be activated by prior experience, [participants] wider reading, and by school experiences' (PD(A) Guide).

When teachers are viewed as agents of change (Fullan 2006), PD programmes and policies that aim to bring about reform, whilst at the same time ensuring access to PD resources and protecting teachers' time, should also support teachers' agency, because this will affect the success of the wider

educational reforms (Priestley *et al.* 2015). Priestley *et al.*'s model of ecological teacher agency may provide a useful framework when considering the factors that can influence a teachers' autonomy and their opportunities to direct their own learning and actions. It takes account of how teachers' past personal and professional experiences, their position in relation to future plans and goals, as well as the conditions in their current context, can influence how their agency emerges. This iterative process is important for understanding how structures and policies that unduly constrain individuals' autonomy in this process may constrain a PD programme's intended objectives in the short and in the long term. Structures that allow a teacher enough space to direct their own professional learning are about supporting teachers' personal professional interests and motivations. Almost two decades ago, Bishop and Denleg wrote that:

Much CPD is directed towards achieving institutional targets determined by external authorities, thus privileging generic curriculum and assessment professional development over individual professional development centring on subject matter. As a consequence teachers' perceptions of ownership are diminished as little value or significance is placed on their personal professional needs. (Bishop and Denleg 2006, p. 86)

The value of self-identified learning is that teachers are supported to draw on their own professional judgement to enhance perceptions of ownership, agency and autonomy. A strong subject focus with subject-specific content PD has an important place in supporting teachers' personal and professional interests. And this requires acknowledging that 'teachers are stakeholders . . . and not just deliverers of other people's agendas' (Priestley *et al.* 2015, p. 4).

Questions have been raised as to the extent to which teachers have the capacity to be agentic and direct their own PD (Cochran-Smith 2001, Priestley *et al.* 2015) but findings from this study would suggest that programme design can influence the extent to which teachers take ownership of their professional learning. The extent of such engagement with professional learning is still influenced by wider cultures (Avis 2003), and policy and cultures will ultimately affect the extent to which programme design alone can influence teachers to take ownership of personal professional learning and enact changes to practices (Spillane 1999). Supporting teachers' development and professional growth (Clarke and Hollingsworth 2002) is an important part of any PD programme, but cannot be decoupled from the policy background. If an individual's basic psychological needs of autonomy, competence, and relatedness are satisfied then they are more likely to function optimally and persevere in the face of challenge (Ryan and Deci 2000). This framework when applied to PD programmes suggests that the programmes that best support a teachers' self-determination are likely to lead to meaningful and active engagement with the programme content.

Mapping two related, yet different, PD programmes using Lloyd and Davis's (2018) model has been an insightful process in terms of recognising how participating teachers' viewed aspects of these programmes differently. This process has also revealed associations between the influence teachers have in directing their own learning and the extent to which PD outcomes were achieved. In the context of this study, the extent to which participants described the level of control they had over the direction of their learning was a factor that emerged as related to the extent to which programme outcomes have been realised. In terms of programme design, it may be that the position on a spectrum indicating the extent to which teachers have control over learning on a PD programme could be an indicator of the extent to which programme outcomes will eventually be met.

Limitations

The study has not set out to establish the overall outcomes and impacts of either of the two programmes on teachers learning and practice. Instead, it is intended to provide a snapshot of their perceptions – at a time when ECTs were actively engaged with both programmes – to establish the extent to which their views of various programme characteristics were associated with reported

outcomes. The relatively small sample size and the differences between the number of responses to PD(A) ($n = 72$) questionnaire and PD(B) ($n = 23$) questionnaire should be taken into account.

In addition, it should be recognised that although during the course of the study, participants were enrolled on both programmes, PD(B) began 1 year after the start of PD(A). It may be that participants were at a different stage in their professional and academic learning when beginning PD(B) and that this affected their perceptions of the scale of the outcomes reported.

Presumably, there may be an optimal balance in terms of intrinsic control versus external motivation, but within the scope of this study, it was not possible to establish what this might be.

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