Multidisciplinary Collaboration in the Development of Individual Education Plans: Crossing Boundaries - the Challenges and Opportunities for the Teaching Profession

Insights from the scholarly, research, and policy literatures are considered in the light of their relevance to the multidisciplinary development of individual education plans (IEPs) as required by the Education for Persons with Special Educational Needs Act, 2004 (EPSEN). While the knowledge base of teachers can enrich, and be enriched, by participation in a collaborative IEP process, teachers' professional knowledge, even when enhanced by the perspective of other professionals, does not translate directly into practice, and what emerges from an IEP meeting will not be a blueprint for the classroom. Teachers will need to reflect in action, and on action, guided, but not controlled, by the contents of the IEP document. If the introduction of statutory IEPs is to meet with more than surface level compliance, teachers must be open to a transformation of relationships, both among themselves and with other professionals and parents.

Key concepts and insights from the literature on communities of practice may provide a helpful lens through which to view issues surrounding IEP development, and may facilitate the design of IEP processes that can mitigate obstacles to collaboration, while being responsive to local circumstances.

Keywords: EPSEN, Collaboration, IEP, Teacher Professionalism, Communities of Practice

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INTRODUCTION

The Education for Persons with Special Educational Needs Act, 2004 (EPSEN) (Ireland, 2004) requires home school, multi-professional, multi-agency and cross-sectoral collaboration, particularly in relation to the drawing up of an individual education plan (IEP) in respect of each child with special educational needs. The National Council for Special Education (NCSE) stated that implementing EPSEN would involve a paradigm shift, from a disability deficit paradigm to an inclusive education paradigm (NCSE, 2006a, p. 97). It will be the standpoint of this article that such a paradigm shift can be fruitfully considered as part of a wider shift to a collaborative perspective, both within the teaching profession and across agencies, institutions and sectors of the public service in general. Such collaboration presents particular challenges for the teaching profession - a profession which has been characterised by a degree of professional isolation (Burke, 2002; Darling Hammond, 1990; Eivers & Clerkin, 2013; Hargreaves & Fullan, 2012). The government decision to delay the commencement of the IEP provisions in EPSEN beyond the original target of 2010 (NCSE, 2008, 2012; Houses of the Oireachtas, 2015) has provided an opportunity for all involved to learn from existing good practice and from the difficulties that have been experienced in Ireland and elsewhere in adapting to the requirements of collaborative working. In the succeeding sections of this article, literature related to collaboration, to professionalism and to knowledge sharing across boundaries will be examined for its relevance to collaborative IEP development.

COLLABORATION: DEFINITIONAL ISSUES, MODELS AND OBSTACLES

The concept of a continuum of collaboration allows us to envisage teams and individuals collaborating in different ways in different situations. Ideally, the nature, extent, and duration of collaboration would be dictated by the complexity of the needs of the individual child at a particular time. The NCSE's definition of collaboration as "an interactive process where a number of people with particular expertise come together as equals to generate an appropriate programme or process or find solutions to problems" (NCSE, 2006b, p. xi) clearly falls on the *collegial/problem-solving/facilitative* end - as opposed to the *hierarchical/knowledge-imparting/ expert* end - of the continuum of collaboration described by Sheridan (1992).

Orelove and Sopsey (1991, cited in Lacey & Lomas, 1993) described three models of collaboration. Collaboration that involved members of different professions working

parallel to but in communication with each other was described as *multidisciplinary* collaboration. Where the professionals worked from the perspectives of their own disciplines, but met together to ensure that their respective inputs contributed to a coherent whole, the collaboration was described as *interdisciplinary*. At the most advanced level, where disciplinary boundaries were crossed in order to share information, knowledge, and skills, and where team members worked jointly on assessments, programme planning, and implementation, collaboration was described as *transdisciplinary*. This transdisciplinary model would seem to imply what Kabler and Carlton (1982) called democratic, non-specialised decision-making, which they recommended for use in complex cases, where acceptance of decisions was important, and provided that the team had the necessary skills. In an IEP context, it would appear that a transdisciplinary approach, incorporating democratically shared decision-making and shared implementation, may indeed be necessary and desirable where the child has complex needs, and where commitment to agreed goals by all participants is particularly important. (Notwithstanding this observation, the term *multidisciplinary collaboration* will continue to be used here as a general term to refer to all forms of collaboration involving more than one discipline or profession).

International literature identifies a range of obstacles to the practice of collaboration, in general, including logistical difficulties (lack of time, difficulties in scheduling), factors related to the institutional structures of school and clinic, differences in professional cultures, deficits in training, and differences in understandings of collaborative processes and professional roles (Ashman, 1994; Lacey & Lomas, 1993; Osborne, Di Mathia, & Curran, 1993; Stroggilos & Xanthacou, 2006). Similar constraints are noted in an Irish context; and here the position is exacerbated by the fact that access to support services is limited, uneven, and poorly coordinated (Day & Prunty, 2010; Travers et al, 2010; Ware et al, 2009). Implementing the type of collaborative practice that is now envisaged in policy and legislation will require the removal, or at least the mitigation, of these longstanding constraints.

Beyond the field of education, an examination of literature from medicine and related fields reveals the challenges involved in establishing and sustaining collaboration across professional boundaries (Atwal & Caldwell, 2005; Currie, Koteyko, & Nerlich, 2009; Oborn & Dawson, 2010). Issues of hierarchy, status and power emerge as a recurring theme. Professional boundaries may become harder rather than softer (Heldal, 2010), with doctors maintaining a dominant position and other professions failing to make a full contribution (Devitt, Philip, and McLachlan, 2010). Scholes and Vaughan (2002) cautioned that multidisciplinary team working, as experienced within Britain's National Health Service, posed

particular difficulties for members of professions such as nursing, whose roles were less clear and whose professional artistry and craft knowledge were not easy to make explicit – a point that may resonate with teachers. Robinson and Cottrell (2000) found that these difficulties were more marked where the professionals involved were employed by different agencies. Norwich and Eaton (2015, p.124) comment that while the literature has identified barriers and facilitators to multi-agency work "there has been no coherent framework that integrates these factors" in context of the introduction of Educational, Health and Care (EHC) plans in England.

In the light of the above it is not surprising that the Mental Health Commission, summarising a wide range of literature on multidisciplinary team-working, reported that the real barriers related not to resources, though resources were an issue, but to professional rivalry, mistrust, confidentiality issues, lack of management support, lack of knowledge of other professionals' unique skills, lack of training in team-working, and the fact that the different professions were trained separately (2006). Notwithstanding these difficulties, the Commission's report stressed that the essential justification and benefit of the multidisciplinary approach lay in the potential to combine diverse perspectives in a holistic manner (p. 26).

If then, as the Mental Health Commission has argued, the diverse perspectives that can be contributed by different professions constitute the raison d'être of the multidisciplinary approach, and yet, issues related to notions of profession and professionalism – issues of status, hierarchy and power - appear as recurrent and even intractable barriers, then a consideration of the concept of professionalism itself may be useful for those concerned with the promotion of collaboration in the EPSEN context.

PROFESSIONALISM

Freidson (2001) saw professionalism as one of three distinct *logics,* or ideologies, by which work, and the social and economic circumstances surrounding it, could be organised and controlled. Thus, *professionalism* involved the control of work by occupational groups, as distinct from control of work in a free market model - *consumerism* - and control by rational/legal bureaucracy - *managerialism.* Concerned particularly with the issue of balance among these three ideologies, Friedson argued that the strength of managerial and consumerist ideologies was increasing, while the influence of the professional ideology was declining and

professions' control over the purposes and ends of their work - for Freidson this was the "soul of professionalism" (p. 213) – was diminishing as they increasingly came to serve ends dictated by the state bureaucracy or by consumers.

Professionalism and the IEP
Applying Freidson's framework to the context of the introduction of an IEP regime in Ireland, what is the picture that emerges? In an exclusively professional approach, the teacher might define goals and select implementation strategies, albeit in consultation with the parent/consumer and in the context of overall accountability to the state bureaucracy. The IEP process as required by EPSEN, and elaborated by the NCSE (2006b), however, differs significantly from this purely professional approach, in ways which bear upon the relative influence of the respective ideologies. Thus, the legislative framework (EPSEN), the provision of national guidelines, and the role, envisaged in some cases for the NCSE reflect the influence of the state bureaucracy (that is, a managerialist approach), while the position accorded to the parent, in a partnership or collaborative role, including involvement in agreeing goals, reflects the consumerist approach. It seems then that the challenge of achieving an appropriate balance among the parties involved in an IEP process at local level is a reflection of the challenge which, in Freidson's view, faces society as a whole in achieving a balance between professionalism, managerialism and consumerism in the control of work.

Are teachers, in particular, ready for the challenges and opportunities involved? Will the multidisciplinary practice, and therefore the shared decision-making that will be required in the IEP process be seen as a threat to their professional autonomy and decision-making role? Will pooling of autonomy through collaboration across professional boundaries be perceived as a threat to a professional status that has only relatively recently been attained – a status in which, perhaps, many teachers still feel insecure (Burke, 2002)? The professional culture of teaching has been characterised by isolation (Burke, 2002; Darling Hammond, 1990) and low levels of collaboration (Eivers and Clerkin 2013). Organisational structures in schools do not readily facilitate collaboration with colleagues, not to speak of parents or non-teacher professionals.

There are, therefore, grounds for concern in relation to the readiness of the teaching profession to embrace the degree and type of collaboration that will be required in the implementation of EPSEN. A more optimistic view would see teachers, while cautious, being open to the advantages that the sharing of diverse perspectives through collaboration can bring (Eraut, 1994). This diversity of perspectives which, as has been noted earlier, is the rationale for multidisciplinary collaboration,

arises largely from the fact that different professions possess different, if often overlapping, knowledge bases.

The Knowledge Base of Teaching and the IEP
Possession of a distinctive knowledge base is an essential characteristic of professions (Burke, 2002; Freidson, 2001). It is not difficult to envisage the potentially beneficial synergies between the knowledge base of teachers and the knowledge bases of other professions, such as psychologists, speech and language therapists and occupational therapists, that will be involved in the collaborative IEP process. Shulman (1987) outlined the knowledge base of teaching in terms of seven areas, three of which are particularly relevant here: knowledge of learners and their characteristics, knowledge of educational contexts, and knowledge of ends, purposes, and values of education. In these areas, the teacher's knowledge base can enhance and be enhanced by multidisciplinary engagement.

Ultimately, however, the resulting insights, and indeed the goals and priorities agreed in an IEP, must be realised in the real and immediate classroom situation. In the view of Hegarty (2000) good teachers have access to an extensive and expanding knowledge base, the sources of which include theory, research, pedagogic knowledge and subject knowledge, as well as other knowledge, skills, and experience. However, these areas in the teachers' repertoire become linked together in a cohesive whole, and are made selectively relevant to the specific pupil and classroom situation, only by the teacher's act of insight in what he called the *teaching moment*. Although Hegarty worked and wrote extensively in the field of special education, he did not apply his theory specifically to the IEP context. Had he done so, he might have suggested something along the following lines: When good teachers participate in the IEP process their engagement with other professionals, as part of a multidisciplinary team, has the potential to allow them to expand, and make new connections within, their repertoire of knowledge and skills. It may be that in a well-functioning team, through experience with joint problem-solving and decision-making, there will, over time, be a mutual exchange of knowledge and skills and the creation and development of a shared, team knowledge base. If Hegarty is correct however, it should not be assumed that what will emerge from an IEP meeting will be an exact blueprint that the teacher will implement faithfully in the classroom situation.

The concept of a blueprint to be followed faithfully is indeed one that forms a significant part of the discourse that surrounds IEPs in Ireland and elsewhere (Mitchell et al, 2010). This view of the IEP, influenced by behavioural psychology, fits comfortably within a technical-rational view of education: Learning goals are

based on assessments that focus on observable behaviours; needs are stated in terms of behaviours or skills and are linked to specific teaching actions; objectives or targets, it is insisted, must be SMART (specific, measureable, achievable, relevant and time-bound) (NCSE, 2006b, p.34; NDA, 2005, p. 61). Few educators will doubt that this approach can be effective in appropriate circumstances, and most will agree that competence in its use should be part of the repertoire of teachers, particularly teachers of children with special educational needs. However, to adhere rigidly or exclusively to this approach, would be to ignore the caution, urged by Hegarty, in relation to assuming that the course of teaching and learning can be fully pre-planned.

A broader, less prescriptive, less 'SMART' approach, might focus on more general, though clearly-stated, goals related to agreed priority learning needs. The task of linking these goals to specific learning activities, and to short-term targets and measurement systems, where relevant, would then be left to the professional judgement of the teacher in the light of daily classroom experience, and in collaboration, where appropriate, with those members of the multidisciplinary team who might have an ongoing involvement with the child. Such an approach would appear to be consistent with Hegarty's perspective and also with Schon's concept of the reflective practitioner (1993) and Eraut's concept of deliberative process (1994). Clearly, an IEP process in the case of a child with complex and multiple disabilities, with needs that require the input of different professionals and agencies working severally and together, in conjunction with the family, and where all parties involved may have competing, pressing and ill-defined priorities, could reasonably be described in terms of "uncertainty, instability, uniqueness and value conflict", (Schon, 1993, p.45), or as not amenable to a "single correct answer" approach (Eraut, 1994, p. 112). Schon's reflective practice and Eraut's deliberative process, therefore, can be instructive for those seeking a broader, less technical road to IEP development.

In summary, the foregoing reflection on collaboration and IEPs in the light of the work of some writers on professionalism and teaching has prompted the suggestion that their own knowledge base can enable teachers to contribute positively to a multidisciplinary collaborative process and that, in turn, the teachers' knowledge base can itself be enhanced by involvement in such a process. It has also cautioned, however, that teachers' professional knowledge, even when enhanced by the perspective of other professionals, does not translate directly into practice, and that what emerges from an IEP meeting should not be seen as a blueprint for the classroom. The IEP process will not obviate the need for flexible, creative, intuitive thinking and action in the teaching moment. The formal structures of a

school's IEP process can provide periodic opportunities for the teacher to reflect *on* action, as part of a deliberative process of ongoing planning and collaborative decision making. Teachers will also need to reflect *in* action, guided, but not controlled, by the contents of the IEP document.

Professionalism: A Critical Stance

Professionalism informed by the thinking of such as Friedson, Hegarty, Schon and Eraut can be seen as consistent with, and facilitative of, collaborative IEP**s.** Skrtic (1991), however, took a more critical stance with regard to the benefits of professionalism, a stance that raises questions in relation to the prospects for success of policy initiatives such as the introduction of mandatory IEPs. Taking Mintzberg's (1979) work on organisational configurations as a framework, Skrtic rejected both *machine bureaucracy* and *professional bureaucracy* as appropriate configurations for educational institutions and school systems. Equity and excellence in education would only, in his view, be achieved through the alternative configuration which Mintzberg had called *adhocracy* - a configuration that would facilitate collaboration and active problem solving in a way which was not possible in the other configurations.

In a professional bureaucracy the worst effects of machine bureaucracy's separation of theory and practice, and its construction of teaching as simple work requiring little professional judgement, were avoided, and the professional was afforded the flexibility and autonomy to respond to individual needs and circumstances. However, in Skrtic's view, this flexibility was exercised only within the limits of the profession's existing repertoire of programmes. Faced with unfamiliar contingencies, the professional would respond from within that repertoire rather than acting as a problem solver. Difficult cases were expected to fit into the programmes available within the repertoire or be moved on to a different professional specialist. Thus, for example, in an Irish context, a child with special educational needs who appeared not to benefit from classroom programmes as modified through the teacher's limited range of differentiation strategies, might be transferred to a special class or special school or become the responsibility of a support teacher.

Furthermore, Skrtic argued, the 'real' professional work of schools was done within an inner, professional-bureaucratic core which was embedded within an outer machine-bureaucratic configuration. Thus, the teacher professionals preserved a degree of professional autonomy in return for outward compliance with the bureaucratic demands of local management and the broader school system. Schools signalled change through their outer structure. Such change was,

however, symbolic or ceremonial and did not penetrate the inner working core (p.165). Could this then be the fate of the IEP policy initiative? Will schools go through the motions in a ritualistic way in order to be seen to comply with what some may regard as an externally imposed administrative and legal requirement (Mitchell, Morton & Hornby, 2010)? Will the IEP meeting and the IEP document be largely symbolic, involving little substantial collaborative engagement and having little relation to the work of the classroom?

Advocates of increased collaboration may find much of Skrtic's critique of professionalism and professional bureaucracy disheartening. However, Skrtic himself found reason for optimism in the changing work practices that he saw as accompanying the transition from an industrial to a post-industrial society. If bureaucracy was, historically, a concomitant of industrial society then he saw adhocracy as a necessary concomitant of a post-industrial society. If industrial organisations depended on the machine bureaucracy form of organization, then post-industrial organizations would require the adhocratic form, relying for effectiveness on collaboration, mutual adjustment among actors, and control through coupling based on reflective discourse.

Future Prospects for Professionalism
Skrtic's view of the challenges and opportunities facing teacher professionalism as the millennium approached were taken up by Hargreaves and Fullan. Hargreaves (2000) saw teacher professionalism as having arrived at a stage of significant, if still emerging, collegiality. However, collaboration was often narrowly focused on practical arrangements for the implementation of externally determined policy initiatives. To the extent that such collaboration can be regarded as largely an attempt to satisfy external pressures, it may be seen, in Skrtic's terms, as symbolic or ritual compliance. Hargreaves argued that teachers needed to move further, towards a postmodern professionalism, in order to avoid being driven backwards by contemporary forces threatening de-professionalisation. Creating a postmodern professionalism, "pushing professionalism further" (p.171), would require that teachers be both internally collegial and externally open and inclusive. "If teachers want to become professionally stronger they must now open themselves up to become more publicly vulnerable and accessible" (Hargreaves, 2000, p.176). Hargreaves and Fullan (2012), while they were particularly concerned with collaboration within teaching staffs, saw such internal collaboration as a necessary precursor to external collaboration.

The linking of internal and external collaboration in this way prompts questions in relation to the capacity of schools and teachers to meet the challenges involved in

the introduction of statutory IEPs in Ireland. This issue of capacity was explored by Hargreaves and Fullan (2012) in terms of building *professional capital*. Professional capital they saw as composed of *human capital*, *social capital* and *decisional capital* (p. 89). Human capital (the calibre of entrants to a profession and their professional education) enhanced and magnified by social capital (quality and quantity of interactions and social relationships, enabling sharing of human capital) builds the capacity of professionals' decisional capital (the form of capital that enables professionals to make discretionary judgements in "situations of unavoidable uncertainty when the evidence or the rules aren't categorically clear" (p. 93).

If the identifying and prioritising of the needs of a pupil with complex disabilities, and the means by which those needs can best be met, is a challenge that requires decisional capital that is beyond the capacity of the isolated autonomous professional, then a multidisciplinary, collaborative, IEP framework can provide the context within which that challenge can be addressed. An appropriately constituted team, representing the range of professionals relevant to the particular case, will bring together the requisite knowledge and skills (human capital). In Hargreaves and Fullan's terms, mobilising this human capital, and making it accessible to all those involved, in order to make appropriate decisions, will require the use the group's social capital to convert its human capital into decisional capital (p. 113). Clearly, it should not be assumed that simply bringing a "team" of professionals together in one place will result in the type of collaboration suggested here – collaboration that, as Hargreaves and Fullan put it, involves talking together, planning together and working together (p.114). Such advanced, formal collaboration will not be necessary in all cases; Hargreaves and Fullan accepted that weaker, more informal forms of collaboration would often be adequate. Their point was that the weaker, or informal, versions of collaboration were prerequisites if teams were to successfully engage in stronger, formal collaborative activities. A team that could collaborate in the more advanced way would have already built a collaborative culture through the creation and sharing of social capital, underpinned by "social relationships, conversations, expressions of interest, provision of support" (p.114).

The flexibility that is afforded by the NCSE's IEP guidelines in relation to the degree of formality and the sequencing of the consultative/collaborative process (2006b, pp.19-20) is to be welcomed. However, in situations that are likely to require high levels of decisional capital, bringing together, for formal consultation, professionals who do not work together or consult together regularly, and therefore have not had the opportunity to develop social capital through informal

collaboration and interaction is, if we accept Hargreaves' and Fullan's views, likely to be less than fully effective. Overcoming the social capital deficit will require that schools and related support structures be organised in such a way as to facilitate sustained, ongoing interaction among the professionals involved. Even in the case of teachers within a school there is a difficulty: The class teacher involved in an IEP may vary from pupil to pupil and therefore the opportunities afforded to any one teacher to build social capital with the non-teacher professionals are limited. In these circumstances, the contribution of a person in a coordinating role, for example, a principal or special needs coordinator, who is in a position to build up the necessary informal relationships, becomes important.

It is being suggested here that a multidisciplinary team that has the capacity to make good decisions (decisional capital), in complex, uncertain situations that involve conflicting values, will not only be one whose members possess, in aggregate, the requisite range of professional expertise (human capital), but one whose members share sufficient social capital to enable them to gain access, across professional boundaries, to the knowledge and expertise of other professionals. It is to this concept of accessing knowledge across boundaries, and the ways in which such boundary crossing may be facilitated or blocked, that the attention of this article will now turn.

KNOWLEDGE ACROSS BOUNDARIES

Communities of Practice
A situative/pragmatist-sociohistoric perspective (Greeno, Collins and Resnick 1996), is helpful in thinking about knowledge as developed within and across the boundaries of social groups and communities. The focus in this perspective is on "the knowing of communities in their social practices" (p. 20), and the ability of individuals to participate meaningfully in such social practices. Many of the ideas that are central to this perspective have been elaborated by Etienne Wenger and his collaborator Jean Lave in their work on *communities of practice* (Lave and Wenger, 1991). Through *participation* in a shared enterprise, members of a community of practice shape both their own experience and the community itself. Through *reification* – "producing objects that congeal experience into thingness" – they "provide points of focus around which the negotiation of meaning becomes organised" **(**Wenger, 1998**,** pp.56-58).

Boundary objects and brokers. Through the dual processes of participation and reification, members of communities of practice share "histories of learning"

(Wenger, 1998, p.103) which sustain and develop the community but also create boundaries with other communities and with non-members in general. However, participation and reification can also facilitate connections across those same boundaries. Objects that are created through reification in one community of practice can cross boundaries into other communities. Such objects are referred to as *boundary objects*. A second source of connection across boundaries, related, in this case to the participation dimension, arises from the fact that individuals can participate in several communities of practice at once. Such individuals may act as *brokers*, "who can introduce elements of one practice into another" (p. 105); they can "make new connections across communities of practice, enable co-ordination and, if they are good brokers, open new possibilities for meaning" (p.109).

Boundary objects and brokers can be more effective when they operate together - "when artefacts and people travel together" (p. 111) - as happens in *boundary encounters,* such as meetings or visits. Where such encounters are sustained over time, they may develop into another form of practice - a *boundary practice* - the goal or purpose of which is to sustain boundary connections between communities.

Communities of practice and IEPs. Several of the key concepts associated with communities of practice may be applicable to the process of multidisciplinary IEP development. The collaborative work of those involved can be seen as participation, and particular participants, such as a school principal or a non-teacher professional who works regularly in the school, may act as brokers, spanning disciplinary boundaries. IEP documents, along with other artefacts and activities that are generated as part of the process, can be seen as reification, and may function as boundary objects, facilitating communication across disciplinary boundaries.

There may be several communities of practice involved, for example, the teaching staff of the school, the clinical professionals as a group, particularly if they are employed by a single clinical agency, or the individual professional disciplines/ departments within a clinical agency (psychology, physiotherapy etc). Where a stable group of professionals, from across these communities, acts as the *IEP team* for a particular school over an extended period, that team may itself take on the characteristics of a community of practice, functioning as a "boundary practice" (Wenger,1998, p.114) – facilitating and sustaining relationships among the several communities of practice mentioned above. Mortier et al. (2010, p.346) outline a promising community of practice model in inclusive education drawing on data from three Flemish schools. The team meetings only included those with the "most direct interest and value in solving the day-to-day challenges" of the child's

participation in class. The success of the teams rested on having an open attitude and creating a safe group environment with relationships of trust.

Facilitating or Constraining Boundary Crossing

Star and Griesemer (1989) concluded that the creation and use of boundary objects that were flexible enough to carry different meanings in different social contexts, while still remaining recognisable across those contexts was central to the process of "developing and maintaining coherence across intersecting worlds" (p. 393).

Bechky (2003) argued that individuals make sense of organisational events from within the unique contexts and cultures of their work and, therefore, "bring very different perspectives to their collaborative efforts" (p. 313). Studying the boundaries between three occupational groups - design engineers, technicians, and assemblers - in the information technology industry in California, she suggested that misunderstandings between the groups were linked to their work contexts, which differed on the basis of "their language, the locus of their practice, and their conceptualisation of the product" (p.312). Boundaries were successfully crossed when differences in the work context were brought to the surface and acknowledged, and when "informal interaction … resulted in transforming the local understandings of the groups to create richer and more broadly-shared understandings" (p. 321). In the setting studied by Bechky, difficult issues of communication, requiring the creation of *common ground,* were successfully addressed by the use of *tangible definitions* of problems, which functioned as boundary objects in a way in which, given the nature of the boundary faced, more abstract, decontextualised boundary objects such as engineers' drawings, could not.   Choice of boundary object was therefore important. Use of an inappropriate boundary object for the particular boundary circumstances would constrain the creation of shared understanding (p. 326).

Bechky's technicians occupied an intermediate position between the design engineers and the assemblers, in effect, spanning the boundary between these two occupational groups. The engineers had a conceptual, static, schematic understanding of the machine to be produced, whereas, in contrast, the assemblers had a physical, spatio-temporal understanding. Occupying a middle ground, the technicians had both a conceptual and a physical understanding and "were conversant in both the language of drawings and that of the machine". Thus the technicians could "smooth the relations in the production process and ease the transition of the machine from an abstract idea to a concrete finished product": they spanned the boundary or, in Wenger's terms, they acted as brokers (pp. 319-320). In addition to this boundary spanning work of the technicians,

Bechky observed that informal interactions, and meeting "around the product" were also necessary and important factors in allowing the respective occupational groups to broaden their knowledge and share their understandings (p. 328).

The settings within which multidisciplinary IEPs are developed are indeed quite different to that studied by Bechky: The product is not tangible, goals are harder to define and the occupational groups come from the personal service, professional arena. Nevertheless, some of Bechky's insights may be relevant. First, concrete objects and tangible definitions may have a valuable part to play: Examples of this might include direct observation, samples of work, videos of pupils and, at a level once removed, observational checklists, charts, graphs, and standardised recording forms. Second, it is possible for members of the different occupations to "meet around the product" by, for example, visiting the classroom, carrying out joint, in-situ observations and assessments and, in other ways familiarising themselves with each other's locus of practice. Third, it is possible that where clinical professionals, such as speech and language therapists or physiotherapists, deliver some of their face-to-face work on site in the school setting, they may be in a position to function in a manner similar to Bechky's technicians - spanning and brokering between the conceptual, schematic ways of understanding the pupil's capacities and needs, which may sometimes characterise the perspective of clinical professionals whose involvement is intermittent and formally structured, and the, arguably, more concrete, contextual, spatio-temporal understanding that may be more typical of the teacher's day-to-day perspective. It is not being suggested here that teachers do not utilise conceptual, schematic ways of understanding but rather that in the teaching moment their perspective may be more concrete and contextual.

Writing from a perspective similar to Bechky, Carlile (2004) outlined a conceptual framework that can be helpful to those involved in boundary management. Boundaries of different complexity, he argued, required boundary management processes of corresponding complexity. Mismatches could occur in different directions, for example, using a more complex process where only simple transfer of information was required, or, conversely, using a process that facilitated only transfer of static knowledge where common meanings could not be assumed and actors' interests were likely to be a barrier. Heldal (2010) outlined how, in the context of multidisciplinary collaboration among health professionals, objects could either facilitate or block relationships at boundaries; an object might be either a boundary object ("belonged to each discipline at once with various meanings") or a *boundary-blocking object* (used in an inflexible manner and remaining the property of its discipline of origin"). A successful boundary object needed to be

at once flexible and stable: "plastic enough to fit into different contexts yet stable enough to establish a shared context" (p.21).

The flexibility which the NCSE guidelines (2006b) afford to schools in the ways they might structure their IEP collaboration can be seen as highly valuable in the light of the above ideas of both Carlile and Heldal. A school might design an IEP process and indeed an IEP document (Wenger's participation and reification) to meet the needs and circumstances of the school and the capacity of the participants, in the light of Carlile's framework. Potentially disruptive difficulties could be identified, analysed and addressed. To what extent do the participants share a common professional language? If participants come from different social/ professional worlds do they share enough common knowledge to enable them to interpret each other's input, and to take it into account in formulating their own? Are there novel factors and uncertainties, or conflicting values and interests that require acknowledgement and political negotiation (Carlile, 2004)? Do different participants see the IEP process as serving different purposes – educational, legal, planning, accountability, resource allocation (Mitchell, Morton & Hornby, 2010)? Consideration might be given, for example, to whether the professionals will collaborate in a *pooled*, *sequential* or *reciprocal* manner. This threefold distinction (Carlile, 2004) is somewhat similar to the distinctions, made in NCSE guidelines (NCSE, 2006b), in the ways schools might choose to structure their IEP collaboration. Will it be sufficient for the inputs of the various professionals involved to be prepared in advance and compiled (pooled) by a designated individual or individuals in order to produce an IEP document? Alternatively, will a sequential approach be preferred - where observations, assessments, or reports are passed through the hands of the respective professionals, each commenting or adding their own input? Or will the complexity and uncertainty be such as to require a more fully reciprocal approach, requiring participants to develop their input "in-the-round" at plenary meetings, and/or through ongoing interaction on the ground - an approach that would involve mutual adjustment.

Following Heldal's insights schools will be wise to consider whether their IEPs will embody both sufficient flexibility in use and variability in meaning to allow them to function successfully as boundary objects - mitigating rather than blocking boundaries - and thus facilitating multidisciplinary collaboration. This again, of course, raises questions in relation to the appropriateness of the expectation that IEPs should conform to the requirements of the SMART acronym - specific, measureable, attainable, realistic and time-bound.

The foregoing discussion in relation to communication and collaboration within and across the boundaries of communities of practice has identified a number of concepts, perspectives and insights that may be helpful in the context of multidisciplinary IEP development. The IEP process, it has been suggested, may be located within a community of practice, or at the intersection of a number of communities of practice. IEP documents and other artefacts may be viewed as boundary objects. Some individual participants may take on the role of broker, facilitating collaboration across boundaries. The conceptual framework outlined by Carlile might be used as a tool to guide the designing of a collaborative IEP process to suit specific local circumstances. It might also prove useful in problem solving when, as seems inevitable, difficulties and conflicts arise – and so might be a help in avoiding the unproductive attribution of difficulties to the perceived shortcomings, or indeed ill-will, of particular professions or professionals. An important message, and one that has also emerged in earlier sections of this article, was the need for, and benefits of, informal interaction and the building up of relationships among the professionals involved.

SUMMARY AND CONCLUSION

At the outset of this article it was suggested that, for the teaching profession, EPSEN could be viewed as part of a paradigm shift towards a more collaborative professionalism. Questions were raised in relation to capacity to meet the challenges involved - capacity within the education and health sectors, and the capacity and readiness of teachers.

If the teaching profession is indeed at a cross roads, as suggested by Hargreaves (1994), then EPSEN is a signpost pointing forward over difficult terrain. The NCSE (2006a) has provided some direction for the way ahead, identifying resource implications and pointing to the need for professional training, improved support systems and cross-sectoral working. However, teachers will be required to go beyond the addition of specific technical competencies to their professional repertoire. They must be open to a transformation of relationships, both among themselves and with other professionals and parents. They must be prepared to uphold the professional logic of their work while seeking a balanced accommodation of the legitimate requirements of the consumer and the state bureaucracy. Such a response will be required from teachers if the major policy development represented by the introduction of statutory IEPs is to meet with more than surface level, technical/procedural implementation, or mere ritual compliance. If teachers are prepared to go down this road, and if policy makers

and administrators are prepared to encourage and support an expansive vision for the profession, rather than fall back on top-down policy implementation prescriptions, then the thinking which this article has tried to highlight may be helpful, particularly the insights that can be gained by viewing the IEP process and context through the lens provided by the community-of-practice literature. The result might bring closer to reality an educational system in which all teachers "work in a collaborative manner with pupils/students, parents/guardians, school management, other members of staff, relevant professionals and the wider school community, as appropriate, in seeking to effectively meet the needs of pupils/ students" (The Teaching Council, 2012, p.8).

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