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**The experience of teaching using a game based approach: teachers as *learners, collaborators*
and *catalysts***

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Abstract

This study focuses on the analysis of collective meaning associated with secondary physical education teachers' (N=12) experiences of teaching games using a Game Based Approach (GBA). Participants taught in one of two different international contexts, southeast Australia or southeast England, and all had some experience of using a GBA to teach games. A phenomenographic research framework was utilised to uncover the qualitatively finite number of ways that GBA-related teaching was/can be experienced. As guided by use of a phenomenographic analysis framework three conceptions of awareness were identified that detail the collective meaning associated with participants' experiences of teaching using a GBA, namely that of a *Learner*, a *Collaborator*, and/or a *Catalyst*. An analysis of findings is presented with discussion focusing on what can be learnt from the different ways GBA teaching is experienced and implications for GBA teaching practice.

Key Words: Teaching experience; Game based approaches; Phenomenography; Variation theory; Physical Education

Introduction

Despite over three decades of interest in game based approaches (GBAs) research across the globe, physical education teachers' use of GBAs to teach games is still yet to be reflected in practice (Jarrett, 2015; Pill, 2011). Reasons for this lack of use are varied and range from a lack of exposure to effective GBA professional development opportunities to the acceptance by educators of a *performative* culture often embedded within school-based physical education programmes (Dismore & Bailey, 2010; Harvey & Jarrett, 2014). In addition literature on games teaching continues to acknowledge the many benefits of using GBAs, it rarely focuses on the subjective nature of in-service teacher experiences of using what they consider to be a GBA. If we consider the comment by Ahmad (2011) that learners 'construct, find or develop meaning in their subjective experiences and this result becomes knowledge for them' (p. 79), the importance of investigating teachers' subjective experiences of teaching becomes paramount for improved GBA uptake and use. Curry and Light (2014) support this notion with their suggestion that teachers' interpretation of GBAs (and teachers' own experiences of using GBAs) are central to decisions about their continued use and, if they are used, the ways in which they then adapt GBAs to their practice. Indeed, the lead author's initial trialling of GBAs was based on a feeling of unease with the traditional methods of teaching being utilised; that somehow an opportunity for learning was being wasted. Yet whenever utilised to teach games the experience of GBA use was often accompanied by feelings of pedagogical uncertainty. Thus, with the primary aim of this study being to investigate the qualitatively different ways in which teachers of physical education experience what they consider to be a GBA when teaching games, the insights revealed in this paper could help improve current provision of GBA pre-service and professional development opportunities and facilitate further growth and change in GBA teaching experience commensurate with educational need.

Game based approaches

In light of its use as an umbrella term for a range of student-centred approaches used to teach games, it is important to offer a definition of what constitutes a GBA. The term GBA has been adopted by a number of scholars and practitioners (for example Harvey & Light, 2015; Light, Quay, Harvey & Mooney, 2014; Serra-Olivares, González-Víllora, García-López & Araújo, 2015) to describe the range of pedagogical approaches that ‘focus on the game instead of decontextualized techniques or skills to locate learning within modified games or game-like activities and that emphasise questioning to stimulate thinking and interaction’ (Light and Mooney, 2013, p. 2). GBAs have also been described as an alternative to the more ‘traditional’ teacher-centred approaches historically synonymous with games teaching in physical education and sports settings (Light, 2002). Jarrett and Harvey (2016, p. 96) stated that the aim of using GBAs is to ‘promote learner involvement through playing modified/conditioned games’. Forrest (2015, p. 146) offered the following account of GBA lesson foci:

‘in a [GBA] lesson, it is theorised that knowledge construction occurs through active student involvement in games and game play that pose problems, questioning and discussion, and reflection on play and progressions on the games to develop this. Through this, students continually construct and reconstruct knowledge about the problems presented.’

Thus, with an understanding of what GBA use intends to achieve it is important to explore the experiences of those who have chosen to use it to teach games.

The nature of experience

In focusing on the exploration of secondary PE teachers’ personal experiences of using a GBA the authors recognise the importance of presenting their understanding of experience and its relationship with education. For both authors Dewey’s (1938) exploration of the nature and value of experience as an educative tool has had a significant influence on how they view the relationship between experience and education. Indeed, Dewey states (1938, p. 25) ‘amid all uncertainties there is one specific frame of reference: namely, the organic connection between education and personal experience’. His seminal texts of *Experience and Education* and *The School and Society* explore the contrasts between traditional and

progressive education with an emphasis on promoting meaningful education based on quality experiences. His view was that traditional education, although laden with experiences, was largely of the 'wrong kind' and 'defective from the standpoint of connection with further experience' (Dewey, 1938, pp. 26-27). As teachers we have a responsibility to develop our pupils and help them grow as learners, individuals and as a community. Dewey (1938) further contends that we do this through the shaping of student experience which also requires recognition of the influence of teachers' own experiences in their journeys to becoming professional educators.

The experience of teaching

Teachers' journeys have all been influenced by their previous experiences. As East (2014) suggests the practice of being a teacher and aligning with institutional, peer, pupil and curriculum expectations is sometimes 'challenged by teachers' existing beliefs and practices, which are often influenced by their own experiences as pupils in school' (p. 686). Therefore, the deeper we are into our teaching journeys the more likely our use of innovations in the classroom might be limited by our experiences (East, 2014). Conversely, our abilities and desires as teachers to seek opportunities to share our experiences and beliefs can act as safeguards to help avoid habitualized methods of instruction and pave the way for engagement in supportive communities of practice and opportunities to experiment with innovative and student-centred forms of instruction like the use of GBAs (Nash 2009; Penney, 2008; Pill, Penney & Swabey, 2012; Rufo, 2014). Thus, the investigation of the relationship between experience and education is an important endeavour for the improvement of teacher education practices with this article focusing specifically on the exploration of teachers' experiences of using GBAs to teach games.

Method

In recognition of the personal and subjective nature of teaching, the focus of this study was to investigate and analyse the collective meaning participants give to experiences of using a GBA to teach games. According to Watkins and Bond (2007), 'meanings exist through the way individuals' experience

situations' (p. 291), therefore a phenomenographic approach was chosen to explore a research question that inherently focused upon variations in meaning offered through the reliving of teachers' experiences of using a GBA.

Phenomenography

Phenomenography is commonly referred to as the study of how people experience a given phenomenon (widely defined as an observable occurrence or occasion) with it commonly used in educational contexts to explore subjective experiences of teaching (Lindner & Marshall, 2003; Marton & Booth, 1997). Dahlin (2007) suggests that phenomenography can best be understood as a research framework designed to highlight and describe variations in experience or variations in the ways people *see* a phenomenon and 'by learning about how the world appears to others, we will learn what the world is like, and what the world could be like' (Marton & Booth, 1997, p. 13).

Phenomenographers accept that a group of people hold a variety of qualitatively finite conceptions. This means that a range of different ideas and meanings evident across a group are identified in order to develop collective meaning on the variation of meaning (Loughland, Reid & Petocz, 2002). In phenomenography, individual voices are only heard as a means of listening to a collective. Thus, it is the description and analysis of experience at a collective level that is the focus 'with the aim to find all the qualitatively different ways of seeing the phenomenon' (Thune & Eckerdale, 2009, p. 340).

Variation theory

With the intention of phenomenographic research being to document the range of conceptions held of a specific phenomenon, associated learning was seen as a move from one conception to another based on an individual's capacities for experience (Dahlin, 2007). Yet prior to 1997 an absence of theory existed as to how learning was made possible. Thus, the variation theory of learning developed by Marton and Booth (1997) quickly become popular as a theory to support learning (Hella & Wright, 2009; Lam, 2013). Central

to the theory is the importance of the *experience of variation* insofar as to discern a specific element of an experience we have to experience variation in that element (Lam, 2013). Bowden and Marton (1998) put it simply by suggesting that without variation there is no discernment and therefore no learning. Discernment, thus, is the necessary condition of learning (Marton & Pang, 2006) with the capacity to discern critical aspects of an object (i.e. those aspects of an experience ‘considered critical for experiencing the object of learning in a powerful way’ [Nyberg & Carlgren, 2015, p. 618]) of significant importance when developing the use of game based teaching practice (e.g. GBAs). In essence then, this study utilises phenomenography and variation theory to ascertain and then investigate participants’ abilities to discern various elements of a teaching experience, that being their use of GBAs.

Participants

A criterion based sample of participants (Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood, 2015) was selected from two different sites: site 1 consisted of in-service PE teachers from secondary schools in southeast England (n = 6); site 2 consisted of in-service PE teachers from secondary schools in southeast Australia (n = 6). Thus, a total of 12 participants were selected for this study and whilst there is no prescriptive sample size associated with a phenomenographic study (Yates, Partridge & Bruce, 2012) the number of participants selected reflects Trigwell’s (2000) suggestion that 10 to 15 participants are sufficient in phenomenographic research as it offers a reasonable chance of finding variation within meaning.

The distinct site locations (England and Australia) were selected to reflect 1) the growing global interest in and use of GBAs, 2) the breadth of research into GBAs emanating from both sites, and 3) the researchers’ awareness of GBA-related teaching at schools and tertiary institutions in each location. Five schools at each site were identified (based on existing contacts at each school). An initial questionnaire was sent out via email to teachers within each school’s physical education department with the following three questions asked:

1. I have heard of GBAs but have never used one.
2. I have tried using a GBA in my teaching but it did not work so I no longer use it.
3. I use a GBA in my teaching all the time.

Respondents indicating that *I have heard of GBAs but have never used one* were not selected as participants for this study. Four respondents indicated *I have tried using a GBA in my teaching but it did not work so I no longer use it* and were chosen as participants for the study. Eight respondents indicated *I use a GBA in my teaching all the time* and were all selected as participants.

Procedure

To facilitate participants' sharing of *deeper responses* associated with exploring personal meanings (Loughland et al., 2002), two 40-60 minute interviews were conducted with each participant. Interview one (which included questions such as 'What is important to you when you are teaching?') focused on establishing trust between interviewee and interviewer (Jacob & Furgerson, 2012) as well as providing participants with an opportunity to reflect upon and share their perceptions of their journey into teaching. The main focus of interview two (which included questions such as 'Can you tell me about an occasion when you are using GBA?' and scheduled at least a week after interview one) was to engage participants in the reliving of a past experience of using a GBA. This was completed through use of the elicitation interview technique which engages both the interviewer and interviewee in the 'reliving' of experience through verbalisation of a past and specific situation (Vermersch, 1994). See Jarrett et al. (2014) for a more detailed explanation of the use of the elicitation interview technique.

Data analysis

In accordance with phenomenographic research analysis, material collected from participant interviews formed a pool of meaning pertaining to both them as individuals as well as the collective (Marton &

Booth, 1997). Material from the pool was inspected against two contexts: 1) the context of the individual interview and 2) the context of other interview extracts viewed collectively in relation to each other (Åkerlind, 2005, 2008; Marton & Booth, 1997). A range of phenomenographic data analysis guidance was used to help shape the analysis process (e.g. Larsson & Holmstrom, 2007; Sin, 2010; Sjöström & Dahlgren, 2002; Yates, Partridge & Bruce, 2012) with the object of research being an experience of GBA use. Thus, key extracts and/or utterances relating to GBA-related teaching experiences became the focus for categorisation with the analysis of transcript data reflecting a helical process of constant return to transcripts (and over time specific utterances) to help build a better understanding of meaning. Initial identification of specific utterances within transcripts was based on recognition of statements that offered a snapshot of purpose, clarity or justification whilst also summarising an aspect of relived experience. For example, the section of transcript below includes within it a selected utterance identified as offering a summary of relived experience:

I get them to stop to turn behind and have a look at the new playing corridors that have been created and I guess *I just want to bring it to the students' attention then and there* um... and I didn't want it to disrupt different groups down the track if they weren't aware the area had changed so I wanted to check for understanding and at the same time I'd like them to move on and find a new partner. (Utterance 74 [in italics] as identified within Transcript IB)

The utterance selected in the transcript above (utterance 74) reveals a relived experience that identifies the act of instruction. The identification of this statement as an utterance, though, did not happen in isolation. Categorisation of this statement as an attribute (within a dimension of variation) was only completed after an analysis of similarities and differences amongst other statements identified as having a similar attention of awareness.

Data presentation – composite narrative

Composite narratives, created with extracts from participants' interviews, are included to highlight aspects of variation and collective meaning held throughout collective experiences of GBA-related

teaching. Each composite narrative was constructed from an analysis of utterances (e.g. stories) provided by participants at each site. Each narrative was made up entirely, and only, from utterances contained within transcript data that reflected similar conceptions of awareness. The intended use of such narrative methods was to provide special insights into the complexity of meaning attributed to GBA teaching experience over and above more familiar ways of sharing research findings (Riley & Hawe, 2004). In this instance it is hoped that the use of composite narratives to retell stories of meaning derived from GBA-related teaching can help to develop overall pedagogical practice in physical education as well as perceptions of the field itself.

Limitations

It is important to recognise the limitations of phenomenography with respect to the complex nature of the data being investigated, which for this study is teachers' experiences of teaching games. To that end Richardson (1999) provides a range of criticisms, none more damning than his belief that 'phenomenographers have no basis for characterising other people's conceptions of the world because they themselves only have access to other people's verbal accounts' (p. 66). Yet Marton and Booth (1997, p. 113) counter such an argument by suggesting that, 'we cannot describe a world that is independent of our verbal, written or acted descriptions or of us as describers'. With the main function of phenomenographic analysis requiring the description and documentation of categories of experience as constituted from data, Saljo (1998) stressed that the identification of these categories was based on researchers' own constructions and that other researchers might arrive at a different set of categorisations. Thus, although data member checking and use of the study's co-author as a critical friend (Smith and McGannon, 2017) were used to explore interpretations of data, the analysis of data for this study relied upon the lead author's value judgements which can indeed promote variability within categorisation processes and can be influenced by said researcher's own conceptions of the domain (Marton & Booth, 1997). With an emphasis on subjectivity, description and interpretation the scope for generalisations to be made through use of a phenomenographic framework is limited. It is not, however, the intention of this

research study to generalise findings, only to identify, inquire into and describe human experience across a group of teachers (Loughland et al., 2002). Indeed, the concept of generalisation is not a key aspect of phenomenographic research. It is the transfer or application of understanding to another situation, context or point in time by the person reviewing the findings that is of greater importance (Sin, 2010). It is also important to note the limited scope of this study in that the views and experiences of school children, who also experienced the teachers' GBA practices, were not explored in this study.

Findings and discussion

Utterances within the transcript data informed the development of an outcome space with three separate dimensions of variation. From this, three categories of description were formulated to describe the qualitatively different ways participants experienced GBA-related teaching. The categories of *Learner*, *Collaborator* and *Catalyst* reflect an inclusive hierarchy (Laurillard, 1993) with categories subsumed within higher ordered categories (i.e. as part of a collective of participants, those who experienced GBA-related teaching as a *Collaborator* also experienced the phenomenon as a *Learner* and those who experienced GBA-related teaching as a *Catalyst* also experienced the phenomenon as a *Collaborator* and a *Learner*). As a hierarchy this group of conceptions reflects a parsimonious ordering of the qualitatively different ways participants perceived their GBA teaching experience whilst also revealing participants' increasing awareness of the phenomenon (i.e. the experience of teaching using a GBA) and capacities to experience the phenomenon (from a collective analysis perspective).

The application of variation theory to the experience of teaching promotes the idea that 'a necessary condition to discern something is to experience it in relation to something else' (Nyberg & Carlgren, 2015, p. 618). For this study this means that teachers discerned aspects of their own GBA teaching experience in relation to other personal experiences of teaching. This supports comments by Dewey (1938) in that the experience of teaching has its connections with previous and further experiences of teaching. With this in mind, the discussion to follow, which explores each category of conception, includes reference to many

statements made by Dewey which in turn offers a perspective to help the reader connect teaching experience with teacher education.

Categories of conception

The three composite narratives below are made up entirely from utterances contained within the transcript data that reflect a similar conception of awareness - that being the experience of GBA teaching as related to a *Learner*, a *Collaborator*, or a *Catalyst*. Each narrative is a storied invitation to help readers engage with the collective awareness and meaning of participants' experiences of teaching games with a GBA.

Composite narrative for the learner

The first lesson is me instructing... it was that kind of games teaching session rather than a lacrosse session... I'm a bit nervous about not really understanding what we're doing because this isn't how I've kind of learnt my own sport... I explain some modified rules for them... emphasising the key things we have been working on in previous weeks and that I would like to see them utilise them well in this game... that's why I think it's TGfU [teaching games for understanding] because... we didn't have to play lacrosse rules... So I have given them a clear instruction about how close they are allowed to be to any other person on their own team at any time.... there are kids that are still barrelling [jumping] in on top of the ball just like before... to be honest there... they just want to play with the ball and aren't that bothered where they should be... ultimately I do get the response I am hoping for which is we need to space out more... I ask specific groups 'what are the issues? Are you working as a team?'... Maybe that's it - maybe what I've associated as being TGfU is so far removed from what you [the interviewer] are expecting...

The collective analysis of utterances (or meaning statements) from transcript data revealed that from a phenomenographic research perspective, participation in the teaching of games using a GBA can be experienced as a *Learner*. Use of the term *Learner* to describe this collection of GBA teaching experiences offers a description of experience very much in line with one of the key epistemological assumptions of phenomenography, that being the focus on knowledge as a relation between the learner and the learned (Booth, 2008). This assumption also refers to the knowing and the learning that exists between the knower and the known which differs from behavioural and cognitive assumptions which assume the development of knowledge by means of accumulation of facts or internal schema formation (Booth, 2008). The term *Learner* is also taken directly from transcript data. Furthermore, this category of conception within the outcome space represents the view that teachers using GBAs are required, first and foremost, to be *learners* with conceptions of experience reflecting a more operational understanding (e.g. GBA teaching that reflects a focus on the process and/or act of teaching within a preconceived learning sequence rather than a focus on student learning).

The *learner* as a way to experience GBA teaching

The *Learner* category represents the view that teachers using GBAs are required, first and foremost, to be *Learners* with conceptions of experience reflecting a more operational understanding. This operational understanding was a prominent feature of participants' relived accounts of GBA-related teaching practice with a clear focus on the actions of self as teacher. For example:

Ultimately I do get the response I am hoping for which is we need to space out more. (Utterance 35)

Utterance 35 suggests a focal awareness on individual action and desire specific to the act of GBA teaching (e.g. there is limited evidence of focus on questioning or the design of games), which is reflective of a more teacher focused teaching endeavour. The focus on 'I' in this context indicates the capacity to view the act

of teaching and learning as a teacher focused endeavour. Thus, in essence, those who experience GBA teaching in this capacity experience the phenomenon predominantly as a *Learner*. With the theme of teacher focused teaching linking experiences throughout this category, and with the term teacher focused teaching itself often being used in literature to describe indicative practice of a novice or *learner* teacher (Confait, 2015; Long, Hall, Conway & Murphy, 2012), the association between teacher focused teaching and teacher as *learner* in the context of this study is appropriate. Furthermore, with any new pedagogical approach being utilised there will usually be a period of adjustment, a realignment of teacher and pupil expectations relating to the learning environment and what it holds. As Pajares (1992) states it may not be a straightforward process to change incumbent teaching styles but the act of trying, if based on sound reasoning, can bring with it mutual benefits to those involved in the teaching and learning equation.

Furthermore, when utilising a GBA there still exists on occasion the requirement for teachers to function as an instructor, to facilitate teacher focused teaching as a component of pedagogical practice utilised to help students work towards and achieve formal and informal learning outcomes. However, such utterances also provide an insight into the shaping of teaching practice based on an individual's capacity for experience, which in this case is more operational. For the *Learner* this means experiencing the phenomenon at a less complex level with fewer elements of the phenomenon being discerned. The practical implication of this, as outlined by Lam (2013), is that teachers would then be limited in their capacities to structure the learning experiences of pupils in such ways that the pupils themselves might be restricted in the development of their capacities to discern the critical aspects of the object of their learning (e.g. taking advantage of a 3 versus 2 situation in a game of basketball).

To conclude the discussion on this category it is important to reflect upon the meaning of experience based on its worth as a component of education. If Dewey's (1938) belief that education must engage with and enlarge experience holds truth then the opportunities that teachers have to be *Learners* with regards to GBA teaching should be embraced as fundamental to improving overall teaching practice and the achievement of *expertise*. As a category existing in an inclusive hierarchy the assumption already exists that teachers at

some stage in their GBA-related teaching practice will be a *Learner*. Thus, in this context the worth of experience as a *Learner* to overall achievement of pupils' education goals is important insofar as it is a stepping stone to the further expansion of capacities of awareness relating to improved GBA teaching practice.

Composite narrative for the collaborator

Without too much instruction I just say 'game on' and I sit back and watch the girls probably for 5 minutes...I wanted them to work it out for themselves... I'm hearing a bit more voice than I expected to hear I think. A lot more communication... it was quite nice in a way and it made me feel a lot more confident with what I was doing with them and it was good to know they were getting something from me and I was giving something to them... I spoke to them again about how they thought they had improved... what were they doing better... had they improved... were they effective?... right guys we are going to play a game of 4 goal here... bibs, you will be defending these two goals, non-bibs you will be defending these two goals... and normal hockey rules, away you go... I've acknowledged he is out there and he has found the space but not saying anything about it... They just scored from a live turnover, so what are we going to agree as a team as our rule? I questioned more than told because I wanted to understand exactly what they knew and how I could best help them.

This category of conceptions as logically structured within the outcome space is that of GBA-related teaching being experienced as a *Collaborator*. This category of conception within the outcome space represents the view that a focus on using GBAs requires engaging pupils in *collaborative* learning endeavours with teachers delegating responsibility for learning.

The *collaborator* as a way to experience GBA teaching

The *Collaborator* category represents the view that a focus on using GBAs requires engaging pupils in collaborative learning endeavours with teachers delegating responsibility for learning. One of the key variations within this category (in contrast to the *Learner* category) is the reliving of teaching experience that depicts a *teacher and pupil focused endeavour*:

There is a ball, you have all the space, see you later... one demo with a group of three then go.
(Utterance 92)

Utterance 92 offers an insight into experience through greater awareness of more complex elements within the learning and teaching equation. In essence it reflects recognition of a learning dynamic that depicts not just the teacher as instructor, but also the pupil as contributor to learning. The utterance makes it apparent that there is no longer sole reliance on the teacher for learning. Thus the suggestion here is that the meaning of experience relates to a *teacher and pupil focused endeavour*.

Dewey (1938) explains that the challenge for teachers does not reside with the adding of new facts to the lesson but more so the problem of 'inducing a vital and personal experiencing' (p. 198) for the pupil. To that end a focus on the teacher *and pupil* is required. Thus, by recognising the pupil within the focal awareness of experience a more complex understanding of GBAs is presented. Moving from a *Learner* to *Collaborator* perspective, a greater capacity to experience GBA teaching is required, thus utterances relating to the *purpose of dialogue (PD)* dimension become more complex, for example: 'What are they doing different to you guys?' (Utterance 48). The variation within both these utterances relates to the different elements required to be discerned, specifically what the requirements are for pupils to be able to answer each question. The purpose of Utterance 48 is to engage the pupil in reflexive thought. To do this successfully they are required to discern elements associated with self and teammates as well as the game being played and the experiences of others. Thus, the teacher in this scenario has arguably induced a meaningful and personal experience for the pupil through a greater capacity of awareness associated with question asking.

As a *Collaborator* experiences of GBA-related teaching begin to more accurately ‘focus on the game and locate learning within modified games that emphasize questioning to stimulate thinking and interaction’ (Light & Mooney, 2013, p. 2). For example:

So they are playing little small sided games and because they are small groups in a big area there is limited opportunity for them not to get involved. (Utterance 32)

Utterance 32 gives indication of two distinct elements of pupil engagement. The first is engagement in modified games played as ‘little small sided games’. The second is the focus on the game so ‘there is limited opportunity for [pupils] not to get involved’. This increase in awareness of the elements of GBA teaching can provide teachers with opportunities to respond earnestly to the responsibilities they have to develop our pupils.

Discussion on this category is concluded with reflection upon the meaning of experience based on its worth as a component of education. To experience GBA teaching as a *Collaborator* holds with it much to be celebrated. Arguably, such a statement offers further support to Dewey’s (1938) questioning of traditional educational experience whereby he asks ‘How many students were rendered callous to ideas, and how many lost the impetus to learn because of the way in which learning was experienced by them?’ (p. 26).

Composite narrative for the catalyst

I'm still looking closely at how the allocated space is shaping the play ... I'm thinking about the social interaction as well, they are a mixed class and I'm always conscious of getting them to change who they work with... after 10 minutes I'll pull the pupils back in and Q [question] each player i.e. you're going to talk to the group about that, you're going to talk about that... I feel that when pupils feel that they have got the answer that they've discovered it um... that they feel more comfortable talking and demonstrating it... I bring them in and get them into their groups. I say coaches, get them to talk, 'how did that feel?' ... Can they tell me or identify or have that awareness of what they are actually doing in that 1 on 1 situation... 'Miss, can we take this line of cones out here, it is too hard' ... No one seems to notice the cold.

The final category of conception as logically structured within the outcome space is that of GBA-related teaching being experienced as a *Catalyst*. What was noticeable within this category of relived GBA teaching experience was encouragement from teachers for pupil progression and/or change at a more holistic level.

The *catalyst* as a way to experience GBA teaching

This category represents the view that through purposeful and collaborative design and action, teachers using GBAs can be catalysts for pupils' learning and development beyond the curriculum. Teaching experience relived as a purposeful endeavour to offer learning opportunities beyond the constructs of curriculum provide the main variation within this category with self, collaborative and contextual aspects of experience prominent elements in focal awareness:

Can they tell me or identify or have that awareness of what they are actually doing in that 1 on 1 situation? (Utterance 78)

Utterance 78 illustrates a focus of attention (within the *purpose of dialogue* dimension of variation) on the element of *awareness* which suggests a capacity to seek and have knowledge fuelled by curiosity and ‘inquiry in order to know’ (Chapman, 2015, p. 317). This type of reflective awareness can be associated with Dewey’s (1933) perspective on reflective thinking which involves ‘an active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends’ (p. 9). More than just demonstrating the capacity to become the object of one’s own attention (Morin, 2011) Utterance 78 suggests the teacher’s desire to develop within their pupils a more complex understanding of experience, thus demonstrating a more complex understanding of experience themselves. Furthermore, from the teacher’s perspective Utterance 78 involves them ‘seeing something in [their] experience that is or could be different from what one already knows and results in questioning/inquiry to understand it’ (Chapman, 2015, p. 317) by virtue of offering pupils choice in how they might demonstrate understanding. To highlight the development of a more complex understanding of experience from a collective perspective two further examples are highlighted:

I am still looking closely at how the allocated space is shaping play. (Utterance 67)

You could see them picking up each concept as we worked through the different game situations.
(Utterance 23)

Both utterances above reveal, at a collective level, meaning aligned to a *pupil and their world focused endeavour* through attention being offered to the environment as part of pupils’ *world* at that specific point in time and also to the holistic development of the pupil through development of conceptual and strategic understanding. The quote by Chapman (2015) below has been included to offer an insightful overview of how a teacher with a more complex understanding of experience, a *Catalyst*, performs at this level:

Teachers with knowledge of reflective awareness think about what is happening in their classrooms rather than merely reacting by jumping to conclusions or blindly accepting the

situation. They ask questions to understand, to check their thinking and students' thinking, and to consider alternative interpretations of an event or behaviour. (p. 317)

Indeed, the practice of such teaching behaviours as it relates to utilisation of a GBA supports comments by Rovegno et al., (2001) and Harvey (2009) who suggested that through the appropriate structuring of the game pupils could use their developing understanding of the learning environment in order to use technical skills to overcome complex tactical problems. This engagement of cognitive function represents an outcome that relates to all three threads of awareness (dimensions of variation) as experienced by a *Catalyst*, namely learning intentions designed to *enlighten* the pupil, having a focus of attention on the *learning environment*, and promoting pupils to engage in *reflexive thinking*.

To experience GBA teaching as a *Catalyst* is the intention of GBA-related teaching practice and reflects Dewey's (1915, p. 198) desire for teachers to be concerned 'not with the subject-matter as such, but with the subject-matter as a related factor in a total and growing experience.' The practical implications of this for the pupil are that a teacher's more complex understanding of the phenomenon of GBA teaching should provide them with more opportunities to achieve a bigger range of game play development and performance outcomes as well as a more engaging learning experience to stimulate holistic development. Ultimately, with reference to the experience of GBA teaching as a *Catalyst*, the authors believe a response to Dewey's (1938, p. 27) questioning of types of learning 'so foreign to the situations of life outside the school' that they would limit 'power of judgement and capacity to act intelligently in new situations' is being offered.

GBA teaching experience

This study shows that teachers' GBA teaching experiences vary considerably which is demonstrated by the capacity to experience GBA teaching as a *Learner*, a *Collaborator*, and as a *Catalyst*. Specific GBA teaching experience in relation to each category, however, was similar in different parts of the world suggesting that the nature of GBA teaching experience had limited site-specific significance. This

perspective still recognises the influence of social, cultural, and material context on teaching experience, yet the strength of contextual influence varies not in relation to site but in determining teachers' capacities to experience GBA teaching.

Thus, GBA teaching experience reflects an attitude to teaching (and learning) that has been around since well before the evolution of contemporary GBAs some three decades ago. The manifestation of this attitude, though, varies depending upon teachers' capacity for GBA teaching experience. For example, a *Catalyst* is more likely to reflect and seek opportunities to share GBA teaching experience in order to develop teaching practice, whereas a *Learner*, although open to the concept and philosophy of GBA teaching, is less likely to embrace the potential of curriculum (as offered through the experience of GBA teaching), but instead act more as its delegate (Nebeker, 2002). *Collaborators* and *Catalysts* also have a better awareness than *Learners* of what and how the context of learning can influence teaching experience. Thus, if a range of GBA teaching experiences are being accumulated (i.e. more experiences of the object of learning and awareness of discerned aspects in relation to other discerned aspects) then it is more likely that the experience of GBA teaching will become more effective on a more consistent basis. An understanding of these likely experiences of GBA teaching in turn has implications for teachers and their teaching practice.

Recommendations for teaching practice

To help teachers experience the phenomenon of GBA teaching with a more complex understanding, a range of teacher-focused recommendations from this study's findings can be made. Firstly, by making teachers aware of each of the categories associated with the experience of GBA teaching they may begin to consider their own categorisation of experience. This in turn has the potential to bring aspects of GBA teaching practice into view when previously those aspects may have been unnoticed or avoided. Such an exercise in personal reflection relating to GBA teaching experiences and pedagogical content knowledge (PCK) in general may also make teachers more aware of their own and colleagues' thinking and practice around teaching. This may also create the impetus to disrupt entrenched practices if appropriate/required.

The highlighting and sharing of experience at a collective level may also help teachers within and across institutions to locate mentors and/or colleagues to support future GBA teaching practice in line with recommendations from Wang and Ha (2012b) and Aguiar and Light (2015). The development and administration of professional GBA-related communities of practice is already apparent at an international level (e.g. the TGfU Special Interest Group - <http://tgfinfo.weebly.com/>) but the convening of communities at a more local level should also be seen as an important addition to raising the standard of teachers' PCK. As an extension of this premise the development of and engagement with such communities in southeast England and southeast Australia is a recommendation for teachers involved in this study.

The experience of variation in the way GBAs are conceptualised is also important for teachers. Such varied conceptualisations make the task of engaging with nuanced literature on GBAs (e.g. nuanced by means of literature focusing on either TGfU, or Game Sense, or other types of GBAs) more accessible and readily available to develop a more complex understanding of GBA teaching experience. Yet resources accessible to teachers that showcase varied conceptualisations of different GBAs are limited. Jarrett and Harvey (2016) offer four separate lesson/session outlines in the one article as a means to highlight similarities and differences between TGfU and Game Sense in both teaching and coaching settings, but additional resources for teachers are warranted. The showcasing of effective GBA teaching as experienced by a *Catalyst* is also recommended as both a hook for teachers considering the use of GBAs as well as teachers with existing experiences of GBA teaching seeking to develop a more complex understanding of their own GBA practice.

Conclusion

The findings of this study relate to teachers' categorisation of GBA teaching experience as being that of a *Learner*, a *Collaborator*, or as a *Catalyst*. The collective meaning of experience associated with each category reflects teachers' capabilities for experiencing GBA teaching. Within and across GBA teaching experience variations in *what* and *how* the phenomenon can be experienced were evidenced through a range

of discerned elements. Thus, for each category the nature of experience was contextual, inclusive and reflective of capabilities associated with experiencing phenomenon nuances with a range of complexity. Therefore, findings are suggestive of the presence of varying degrees and forms of social influence restricting or expanding teachers' capacities to experience and understand the GBA concept as a whole.

Findings from this study, though, detail more than just a blanket understanding of the influences on GBA teaching experience. Indeed, the nature of teachers' GBA teaching experience also relates to key aspects of teaching that teachers may or may not be focussing upon when using a GBA. These aspects of teaching relate to what teachers are actually aware of (and the level of importance they place on such awareness) when experiencing GBA teaching. For the *Learner*, it is limited focus on questioning and the design of games, which is reflective of a more teacher focused teaching endeavour. For the *Collaborator* it is greater awareness of and focus on pupil decision-making as part of a teacher and pupil focused endeavour. For the *Catalyst* it is a heightened focus on providing pupils with development opportunities as part of a pupil and 'their world' focused endeavour that places holistic education of the pupil as a high priority. It is this understanding of GBA teaching experience that provides the most salient addition to contemporary GBA-related teaching literature; that being teachers' likely experiences of GBA

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