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Examining the consistency of mastery and performance goals across group and perceived-ability contexts

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Abstract

We report a series of three studies investigating the consistency of 8- to 10-year-olds' achievement goal orientation across different learning contexts. Our main aim was to examine whether goal orientations represent stable individual differences towards learning or vary according to context. To achieve this we examined the influence of two variables on the consistency of children's achievement goal adoption: (a) learning activities which varied in levels of peer interaction (individual, collaborative, and whole-class) and (b) children's perceptions of their ability in these contexts (high or low). We developed a method of measuring achievement goals in each of these contexts by presenting children with situation-specific scenarios in which they selected a response from a choice of either mastery- or performance-oriented behaviour. We then examined achievement goal preferences within each context and the consistency of goal responses across contexts. Results suggest that for some children achievement goal orientation is consistent across contexts and appears to be dispositional. However, most children adopted different goals according to context. Also, specific interactive contexts exerted particularly strong influences on achievement goal preferences both within and between the three samples. Implications for a theoretical understanding of achievement goals as both situationally specific and dispositional are discussed.

Keywords: mastery and performance goals, goal consistency, contextual variation.

1. Introduction

Achievement goal theory maintains that the goals children pursue when learning create a meaning system, or orientation, which determines how tasks are approached and interpreted (Urdan, Kneisel, & Mason, 1999). In this paper we focus on the two types of goal orientations that have received most attention in the literature. A mastery orientation concerns the desire to develop competence and increase existing skills and knowledge through mastering new and challenging tasks. Pursuing mastery goals has been related to a preference for challenge (Ames & Archer, 1988), increased effort and persistence (Elliot & Dweck, 1988) and the use of effective cognitive strategies which promote comprehension (Stipek & Gralinski, 1996). A performance orientation, on the other hand, concerns the desire to demonstrate competence relative to others. The emphasis within this orientation is on demonstrating what has already been learned rather than striving to learn more (Ames & Archer, 1988; Dweck & Leggett, 1988). Performance goals have been related to a preference for easy tasks, the use of surface-level cognitive strategies such as memorising (Greene & Miller, 1996) and self-handicapping behaviour such as withdrawing effort when tasks become challenging (Midgley, Arunkumar, & Urdan, 1996).

There are several models of goal orientation which offer different explanations for why individuals adopt particular goals. Some theorists argue that goal orientations are personal characteristics and that individuals are oriented towards either mastery or performance goals (Duda & Nicholls, 1992; Dweck & Leggett, 1988; Elliot & Dweck, 1988). Others view achievement goals as situated and the product of particular features of the environment (Ames & Archer, 1988; Blumenfeld, 1992; Turner & Meyer, 1999; Urdan et al., 1999). Although most theorists now acknowledge that both individuals and learning environments can be characterised according to the strength of particular goals (Jagacinski, Madden, & Reider, 2001; Jagacinski & Strickland, 2000; Meece & Miller, 2001; Thorkildsen & Nicholls, 1998), research still tends to be polarised. Studies tend either to measure achievement motivation as an individual difference or focus exclusively on features of a particular context, in predicting goal-oriented behaviour and thus do not empirically address the question of individual versus environmental differences. Achievement goal theory, therefore, can appear fragmented and seemingly lacking a clear theoretical foundation; results are often compared across studies in which achievement goals are viewed as different constructs and measured in different ways (Murphy & Alexander, 2000).

If goal orientations do represent stable individual differences, then they will remain consistent regardless of the context in which they are measured. If, on the other hand, they are dependent on particular learning environments, an individual's goal orientation will vary between contexts that emphasise different goal structures. Surprisingly, there are very few studies which have addressed this issue directly by tracing the same individual across a variety of contexts (Pintrich, 2003). The studies that have measured goal consistency tend to support the notion that goals do remain stable across tasks (Meece, Blumenfeld, & Hoyle, 1988) and domains (Duda & Nicholls, 1992). We argue this may reflect how achievement goals have been measured rather than their stability, as the methods used have limited power in distinguishing accurately between contexts. In the current paper we present an alternative method in which children judge their goal preferences over a variety of classroom contexts depicted in short situation-specific scenarios. This method allows us to assess the influence of specific contexts as well as giving an indication of how consistent individual goal preferences are between contexts, thus directly addressing the person-situation debate.

We examine an aspect of classroom context which has not been addressed in relation to achievement goals; the degree to which classroom work differs in the type of social interaction children experience. We distinguish between (a) individual work where there is little or no direct social contact with others, (b) collaborative work where the child experiences direct peer interaction and (c) whole-class work where both peers and teachers contribute to the social organisation of the learning activity. Several authors have suggested that collaborative contexts should promote a mastery approach while whole-class contexts are likely to be more competitive and therefore performance-oriented (Ames, 1984, 1992; Blumenfeld, 1992). However, the influence of these environments on children's achievement goals has not been directly compared in a single sample. Before presenting our studies we first discuss existing models of goal orientation in more detail and highlight current methodological limitations in achievement goal research.

1.1. Achievement goals as dispositions

Underlying much of the literature is a view of achievement goals as representing stable individual differences which are consistent across achievement settings (Murphy & Alexander, 2000). This approach is based on Dweck's (2000) cognitive developmental model which relates goal orientations to children's implicit theories of intelligence, that remain relatively stable. She labels children who believe that intelligence is a fixed trait 'entity theorists' while those who assume intelligence is a malleable property, which can be developed through learning and effort, 'incremental theorists'. Her empirical work has shown that incremental theorists tend to adopt mastery goals and focus on the processes through which learning and achievement can be developed in line with their beliefs about the fundamental properties of intelligence. On the other hand, entity theorists tend to adopt performance goals and focus on outcomes and measures of achievement, such as grades (Cain & Dweck, 1995). From this perspective, an individual's goal orientation should remain consistent across contexts as one cannot hold a view of intelligence as being both fixed and changeable at the same time and therefore one can only either be mastery- or performance-oriented. Dweck (2000) notes that when students are asked to choose between mastery and performance goals, half will usually select performance goals and half mastery goals.

The difficulty in interpreting Dweck's work, and that of others who have adopted this perspective, is in their demonstration that achievement goals can be manipulated, at least temporarily, in an experimental context (Dweck, 2000; Dweck & Leggett, 1988; Elliot & Dweck, 1988; Grant & Dweck, 2003). Experimental manipulations involve participants being randomly assigned to conditions which emphasise either mastery or performance goals, usually with the use of goal-focused instructions (e.g., Butler & Neuman, 1995a). Studies using this methodology have found differences, as a main effect of goal condition, in cognitive, behavioural and performance-based measures, in line with those expected of mastery and performance orientations (e.g., Elliot & Harackiewicz, 1996). These studies seem to contradict the notion that goal orientations represent individual differences which are based on broader belief systems, as they have demonstrated that it is possible to assign children specific goals. In addition, children appear very responsive to these situational cues as studies are usually cross-sectional with manipulations occurring at just one time point (Urdu et al., 1999). If goal orientations are dispositional and therefore have a strong effect on behaviour, then presumably they would be more resistant to change in the short term.

Dweck (2003) has argued more recently that beliefs about intelligence and ability may only predispose children towards adopting particular goals but that situational variables will alter the probability of those predispositions prevailing. For example, Mueller and Dweck (1998) note that children are particularly sensitive to the type of feedback they received in relation to their performance and that this can influence the type of goals they adopt. They illustrated this in a study where children were randomly assigned to either a condition where they received praise for their effort or one in which they were praised for their ability. The effort feedback led to children choosing more challenging tasks and endorsing mastery goals during the experimental session. The ability feedback led to children preferring easier tasks and attributing failure to low-ability as opposed to low-effort. While this study does illustrate the influence of feedback, it does not provide evidence that these contexts overrode personal goal preferences as these were not assessed prior to the experimental manipulation. What it does suggest is that if goal orientations are dispositional, then these dispositions do not appear to exert a strong influence on behaviour as they can be altered by simple instructions or feedback.

In summary, a dispositional approach argues that goal orientations are related to stable beliefs about ability and intelligence. However, experimental evidence shows that these can be altered by providing strong environmental cues. This raises questions about the usefulness of describing goal orientations as underlying individual differences and suggests that situational influences may have a greater role in the types of goals children adopt than implied by a dispositional model.

1.2. Achievement goals as context sensitive

Several authors have argued for a more situated understanding of achievement goal orientation, maintaining that situational cues determine the types of goals children are likely to pursue in particular contexts (Ames, 1992; Ames & Archer, 1988; Blumenfeld, 1992; Meece, 1991). Ames (1992) notes that the type of task a learner is expected to complete, the way in which that task is evaluated and the nature of authority within the classroom ('autonomy-supporting or controlling' p. 266) will all contribute to an emphasis on a particular goal orientation. For example, tasks which are meaningful to the learner, provide an appropriate level of challenge, and activate interest will encourage a mastery-oriented approach. That is, learners will be more likely to show persistence, expend effort and strive to gain understanding. On the other hand in contexts which are based on absolute measures of performance, such as examinations, learners are more likely to adopt performance goals and focus on demonstrating ability. This position represents a situationally-specific approach to achievement goal orientation in which the learning environment itself, not personal belief systems, orients learners towards approaching their learning in particular ways. From this perspective an individual can be mastery-oriented in some contexts, while in others they may adopt a more performance-oriented approach (Blumenfeld, 1992).

This way of conceptualising achievement goals has received support from studies conducted in the classroom. For example, Ames & Archer (1988) investigated children's use of learning strategies in relation to their perceptions of the goal structure of their classroom. They found a positive relationship between students reporting a classroom emphasis on mastery goals and their use of effective learning strategies, preference for challenging tasks and interest in the subject. In a different study, a perceived emphasis on performance goals in the classroom was associated with self-handicapping strategies and a reluctance to seek help (Urdan et al., 1999). However, these studies did not compare how the same children might have responded in

classrooms which emphasised different goals. In addition, there was considerable variation in children's perceptions of the relative strength of mastery and performance goals within the same classroom. This suggests that pre-existing beliefs and goals may have directed behaviour and may have resulted in children attending to particular features of their environment which would confirm their existing beliefs.

While this approach does emphasise the role of classroom context in children's goal orientation it does not adequately address how an individual responds to different contexts or how individuals interpret the same context in different ways. The relative influence of situational and personal factors therefore still remains unclear within this perspective.

1.3. Achievement goals as an interaction between the individual and the environment

The above evidence suggests that goal orientation is not simply determined by either personal characteristics or situational influences but may involve a more subtle interaction between the two. Pintrich (2000) proposes a theoretical model which takes into account both context-specific and dispositional variables. He argues, in line with Dweck's model, that goal orientations are schema-like cognitive representations in that they signal a system of related beliefs about 'competence, success, errors, ability, and effort' (p. 102). However, he argues that individuals can possess several different achievement-related schemas which can be activated, like all representations, either prior to or as a response to a particular learning experience. How and when different goal orientations are activated depends firstly on the contextual information provided and secondly, on the strength of an individual's personal goal preferences. For example, some individuals may be more mastery-oriented or more performance-oriented in general, and therefore display stability in their achievement goal orientation across domains and over time. For these individuals, a particular goal orientation may be primed and therefore more readily activated in any context. However, contexts with particularly strong informational cues, such as experimental manipulations, can override even strong personal goal preferences. Some individuals may not have strong personal goal orientations and therefore show greater variability in the types of goals they adopt depending on their environment.

This model implies that goal orientation may be determined by different factors for different individuals. In order for research to test this, studies need to measure both the influence of specific contexts and the stability of personal goal preferences across contexts. However, current approaches to measuring achievement goals are limited in their ability to distinguish accurately between contexts. Harter & Jackson (1992) note that our understanding of the nature of motivational constructs is largely dependent on how they are operationalised in the measures we use to assess them. Inherent in current achievement goal measures is an assumption that goal orientations represent underlying approaches to learning, which makes them unlikely to produce results which are able to accurately reflect contextual variation. For example, one method of measurement has been to pit each type of goal orientation against each other and ask participants to make a forced choice between the two. Dweck (2000) asks children which they feel is more important: 'looking smart or attempting challenging learning tasks' (p. 184). Based on this choice, participants are categorised as mastery- or performance-oriented. Another method uses self-report questionnaires which measure the strength of an individual's mastery and performance goals in general. Neither of these approaches, either the forced choice or achievement goal scales, are designed with reference to the specific context in which a particular goal might be adopted. For example, in the Patterns of Adaptive Learning Scales (PALS), one of the most widely adopted questionnaires, the authors note that items are

deliberately worded in a general, non-specific format (Midgley et al., 2000). For example, one of the performance items reads; 'one of my goals is to show others that I'm good at my class work' (p. 12). Here, a participant has no informational cues regarding the type of class work this refers to, the particular domain in which it occurs, or to whom the 'others' refer: classmates, teachers or parents. By extracting contextual information, both these methods assume that an individual will access a general orientation which exists independently of any particular situation.

The PALS manual does advise when giving the questionnaire to middle or high school students, that it be presented with reference to a particular subject as at these levels subjects are likely to be taught by different teachers in different classrooms (Anderman, Urdan, & Roeser, 2003). However, not only does this imply that younger children have an analogous attitude to all their schoolwork, but also that the only contextual cue necessary for an accurate measure of achievement goals is the subject domain. While some studies do find variation in goal orientations across domains (Bong, 2001) others report significant consistency in students self-reported goals in different achievement settings (Duda & Nicholls, 1992). Defining context on the basis of subject content may be too broad a definition for accurate responses which may contribute to the inconsistencies which exist across studies.

1.4. Extending the role of context

We argue that an emphasis on context needs to extend beyond a focus on specific content. One of the universal aspects of the classroom environment that might be expected to influence goal orientation is the interactive context or the nature and level of interaction the child experiences with teachers and peers during learning. There is evidence to suggest that the group structure of learning tasks may influence the degree to which children are responsive to situational variables or act from individual differences. For example, Meece et al (1988) argue that whole-class work is generally teacher-controlled and very structured in terms of overt rules of behaviour. This structure limits the child's autonomy and the need for self-regulation, as behaviour is generally governed by external rules and practices, thus reducing the influence of individual differences. Therefore, learners are more likely to be influenced by the imposed and shared norms of whole-classes. Smaller-group activities, on the other hand, have a less formal structure, giving the child more control and opportunity for self-management. In these situations, individual differences are likely to play a greater role in directing children's attention and behaviour. In individual and collaborative activities therefore goal orientation may be determined by children's individual interpretation of such contexts which may be influenced by a more general orientation towards learning.

In predicting how children might interpret and respond to particular contexts it is also important to address self-perceptions of ability. Perceived ability has been shown to be a significant moderator of achievement goal outcome. Children with high perceived ability tend to perform well regardless of which goals they pursue. However, children with low perceived ability display a more negative pattern of behaviour and performance when holding performance goals but less negative when holding mastery goals (Dweck & Leggett, 1988; Jagacinski et al., 2001). Mastery goals, therefore, are thought to moderate the negative pattern associated with low perceived ability whereas performance goals are understood as focusing individuals on how their ability will be judged and are therefore associated with more negative effects, such as the avoidance of challenge (Jagacinski et al., 2001).

We argue that addressing different levels of classroom context will allow research to examine the factors which may influence achievement goal adoption, specifically, the extent to which goal orientation might vary according to different contexts or remain stable. In addition, providing more detailed and specific contextual cues when assessing achievement goals may help children reflect on and access their underlying beliefs and motives more accurately. Murphy and Alexander (2000) point out that research often assumes goals are explicit to the individual and can be accessed and communicated relatively easily as achievement goal scales only provide a minimum level of information. Reflecting on behaviour in general is a difficult task for both adults and children but children's particular difficulty with self-reporting behaviour (Turner & Meyer, 1999) suggests a need for more detailed and context-specific measures of achievement goal orientation.

1.5. The current studies

We examine interactive context and perceived ability as features of context which might influence achievement goal adoption in three samples of primary-aged children. We investigate achievement goal orientation in whole-class, collaborative and individual learning activities both when perceptions of ability are high and when they are low. Given the limitations of current methods in addressing context, we developed an alternative method which allows the measurement of achievement goal orientation within each context as well giving an indication of the stability of goal orientation across contexts. This method takes the form of learning scenarios which represent different interactive and perceived-ability contexts. Children are asked to imagine the situations presented in the scenarios and then choose between one of two behaviours (mastery- or performance-oriented) that they believe is the most likely way they would act in each specific situation. While this measure is still subject to the limitations of self-report (Turner & Meyer, 1999), it provides the child with several situational cues from which to reference their behaviour and therefore is a departure from current achievement goal measures which deliberately exclude contextual information. In a series of three studies, we aim to examine the influence of each context on achievement goal orientation and the extent to which children's goal orientation remains stable across contexts. Based on previous research (Meece et al., 1988) we predicted that whole-class contexts would exert a stronger situational influence than either collaborative or individual contexts in which children may be more influenced by individual differences. In addition, in line with Pintrich's (2003) model we predicted that some children would display strong personal goal preferences while others would show more variation in their goal preferences across contexts.

2. Study 1

2.1. Method

2.1.1. Participants

Twenty-six (18 female, 8 male) children from two primary schools in a city in the South East of England participated in this study. Ages ranged from 8;4 to 10;3 years with a mean age of 9;4 years. Children were recruited on the basis of participation in an earlier study where selection was based on reading profiles and the sample had a female bias. Children spanned eight separate classes and all eight class teachers participated by completing a questionnaire for each child in their class.

2.1.2. Design

Achievement goals were measured across three group contexts (individual, collaborative and whole class) in two perceived-ability conditions (high and low) using a repeated-measures design. The dependent variable was categorical, with responses indicating either mastery- or performance-motivated behaviour.

2.1.3. Achievement goal scenarios

Following a pilot study with 5 children not in the main study, six scenarios were devised, one to represent each of the six contexts. The scenarios outline a short example of a task the child might experience in each learning context and presents a dilemma in relation to that task. The dilemmas involve making a choice between a mastery or a performance behaviour. In half of the scenarios the choice is between two versions of the task (more or less challenging) while in the remaining half the choice is between increased or decreased persistent or effort in the face of difficulty or failure encountered during the task. Scenarios are listed in Appendix A.

2.1.4. Perceived ability

In order to determine perceived ability, children were asked to choose a subject they felt they were good at and to choose one they felt were not good at. Scenarios were then presented with reference to each child's high- and low-ability subject choice.

2.1.5. Validity measures

We included two additional measures to allow comparisons between different methods of measuring achievement goals. A behavioural task-choice measure, adapted from Dweck (2000), asked children to choose between two 'spot the difference' puzzles to complete at the end of the session. They were told one of the puzzles had a clue and was easier, which meant they were more likely to solve it correctly (performance). They were told the other puzzle did not have a clue and was more difficult but they were likely to learn something new from doing it (mastery). In addition, we adapted the six achievement goal scenarios directly for teacher-rating in order to compare these with children's self-report responses.

2.1.6. Procedure

Parental consent was received for all children to participate. A female researcher saw children individually in a quiet room in the school over the course of a week. After indicating perceived-ability choices children were presented with the first three achievement goal scenarios and asked to imagine each situation happening to them in the particular subject they had selected. The high and low-ability scenarios were blocked in two groups of three. The order in which scenarios were presented was counterbalanced; half the participants were given the low perceived-ability scenarios first and half the high perceived-ability scenarios. After each scenario was read out, children were shown a card with the two possible responses and asked to indicate which they felt would be the most likely way they would respond in that specific situation. In order to clearly distinguish between ability conditions, the task choice measure was presented in between the two blocks of scenarios. Once the child had chosen a puzzle, it was set aside to complete at the end of the session. Following this, they were presented with the remaining three scenarios. At the end of the session children were told there was not enough time to complete the puzzle but that they could take it away to do in their own time.

Particular effort was made by the researcher to make the scenarios as distinct from each other as possible. Scenarios were read out twice and children given as much time as they needed to make their choices. In between each scenario the researcher chatted with the children about school, play, sports etc. Children were reminded again at the beginning of the next scenario of their choice of subject, that it was their 'best' or 'worst' depending on the condition and they were to imagine the next story happening in that particular subject. Class teachers were given the teacher-rated scenarios to complete in their own time during the testing week.

2.2. Results

Responses to each scenario were coded as 0 (mastery) or 1 (performance). Due to the categorical nature of the data and the use of a repeated-measures design, binomial distribution and sign tests have been used for analysis. Where significance levels are reported these are all two-tailed.

2.2.1. Achievement goal stability across scenarios

In order to measure the degree of stability in children's goal choices across the six scenarios, each child was categorised according to the number of mastery and performance responses made in total. Children who gave all mastery or all performance responses were categorised as having a strong personal goal-orientation. Children were classified as moderately mastery- or performance-oriented if they gave consistent responses in five out of the six scenarios. A weak classification was given if responses were consistent in only four out of the six scenarios while a neutral classification was given when an equal number of mastery and performance responses were made overall. Figure 1 shows that the majority of children (64%) displayed a weak goal orientation and an equal number of the remainder were inclined towards mastery and performance goals. No child gave unequivocal mastery or performance responses across all the scenarios and 23% were classified as neutral, displaying no particular goal preference.

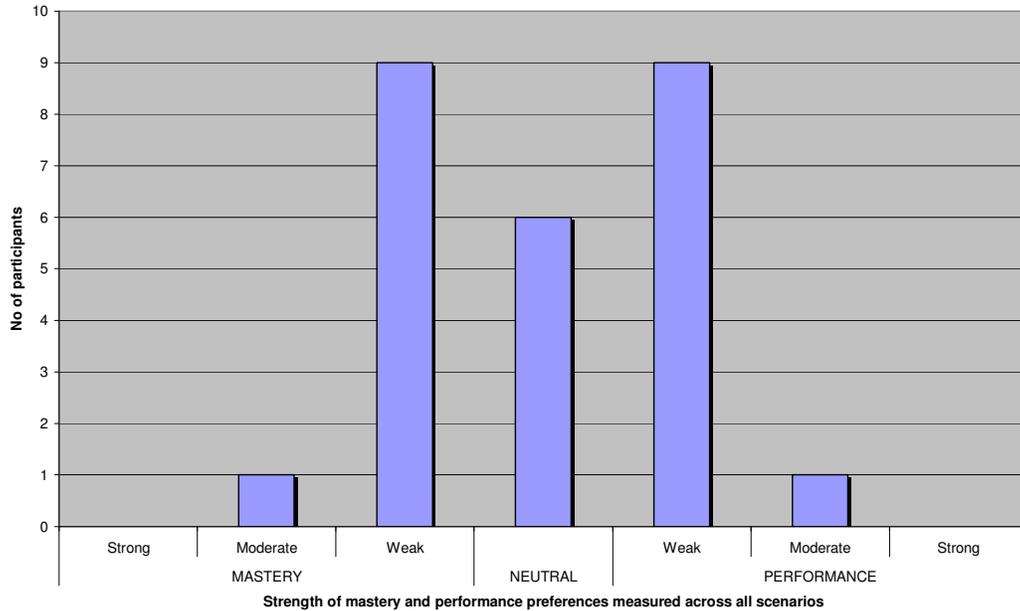


Figure 1. Strength of achievement goal orientation based on consistency across all scenarios

2.2.2. Interactive context and perceived ability

In order to assess whether particular interactive contexts were associated more with one goal orientation than the other, the number of mastery and performance responses given for each scenario was analysed using binomial distribution analysis. As seen in Figure 2, in the whole-class scenarios children were significantly more likely to select a mastery goal when perceived ability was high ($p < 0.001$) and a performance goal when perceived ability was low ($p = 0.009$). In the individual and collaborative scenarios there was a relatively even distribution of goal responses in both high- and low-ability contexts and binomial tests confirmed that the number of mastery and performance responses made in each of these contexts did not deviate significantly from the mid point of 13.

Excluding the whole class context, which appeared to exert a particularly strong contextual influence, we examined the consistency of goal responses within the individual and collaborative contexts. In the individual context 9 children (4 mastery and 5 performance) gave the same response in both high- and low-ability conditions while the remaining 17 gave different responses across ability levels. A similar pattern was evident in the collaborative context where 12 children (4 mastery, 8 performance) gave consistent responses across both ability conditions while 14 responded differently.

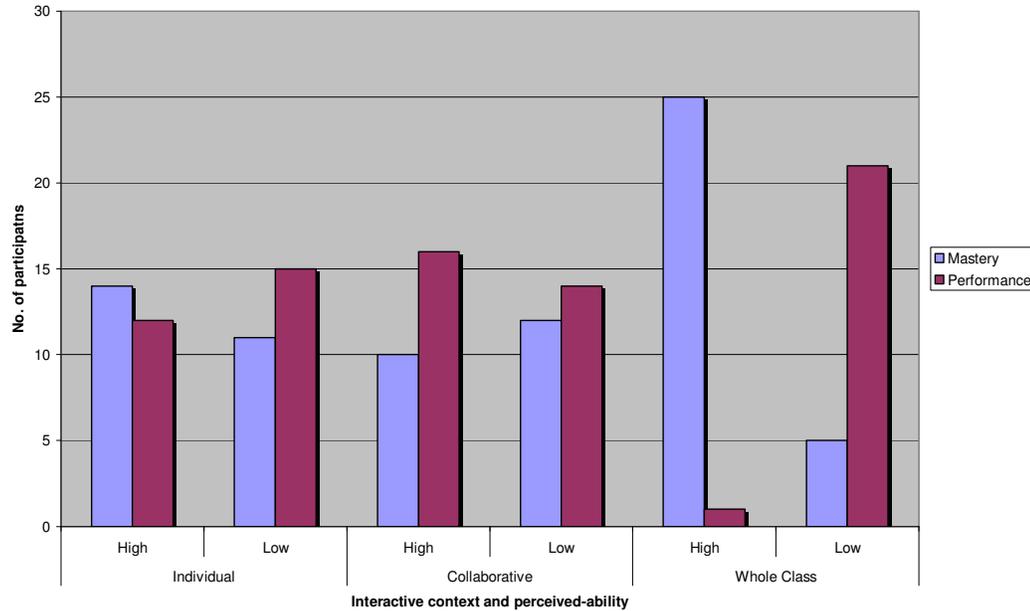


Figure 2. Number of mastery and performance responses given for each scenario

Finally, we looked at whether perceived ability influenced the stability of goal responses. This revealed a very similar pattern of results to the analysis reported above, whereby children were as likely to adopt the same goal in each perceived-ability context as they were to change their goal preference from one to the other. In the high perceived-ability contexts 14 children (6 mastery and 8 performance) gave consistent goal responses across individual and collaborative contexts, while 12 gave different responses. In the low perceived-ability contexts, half the children gave consistent responses (5 mastery and 8 performance) while half were inconsistent.

While half of the children chose the same goal responses in the group contexts and half the same response across perceived-ability context in relation to the individual and collaborative scenarios, only four children (7.7%) were consistent across all four of these contexts, all of whom gave performance responses.

2.3. Validity of Achievement Goal Scenarios

2.3.1. Consistency of self-report and teacher-rated scenarios

Responses from the teacher-rated scenarios were compared with the self-reported responses for each scenario. The percentages of responses which were consistent across self-report and teacher-rated scenarios are shown in Table 1. Chi square analysis revealed a significantly higher degree of consistency than would be expected by chance for the low perceived-ability collaborative context ($\chi^2(1) = 7.95, p = 0.009$). There is a relatively high degree of consistency for each of the whole class contexts, although neither of these reached significance. For the remaining scenarios approximately half the responses were consistent between self-report and teacher-rated scenarios.

Table 1. Consistency rate (%) between self-report and teacher-rated scenarios

	<i>High PA</i>	<i>Low PA</i>
<i>Individual</i>	54	50
<i>Collaborative</i>	54	77
<i>Whole Class</i>	69	65

2.3.2. Consistency of self-report scenarios and task choice measure

69% of the sample selected the mastery-oriented puzzle and the remaining 31% selected the performance-oriented puzzle. Task-choice measures have been used in other studies to extract a general goal orientation. Here, we use them for comparison with just our individual scenarios, as both measures involve the child making choices relating to individual activities. We did not however feel that the task choice measure would be an accurate comparison for either the collaborative or whole-class scenarios. Although no data was collected regarding perceived ability with respect to the task choice measure, it is reasonable to assume that children of this age may have felt confident in their ability to undertake a familiar type of task in the form of a spot the difference puzzle. However, we have made separate comparisons between the task choice and the high- and low-ability scenarios. A sign test revealed a significant degree of consistency (70%) between the high-perceived ability individual scenario and the task choice measure ($p = 0.05$). However, comparison between the low-ability individual scenario and the task choice measure revealed only a 50% consistency rate.

2.4. Discussion

Taking into account children's responses across six different learning scenarios the majority displayed only a weak personal goal preference; no child could be classified as having a strong orientation towards a particular achievement goal irrespective of context. However, of the weak tendencies that were observed, an equal number of children leant towards mastery goals and performance goals. This supports Dweck's (2000) finding that mastery and performance goal orientations are evenly distributed in the population. However, the whole-class scenarios had a particularly strong influence on children's responses: interactive context and perceived ability interacted in a similar way for a significant number of children, over-riding any personal goal preferences. This is in line with research which suggests that the cues inherent in a whole-class environment are strong enough to guide children's behaviour over and above the influence of individual differences (Meece et al., 1988). In addition, we found that perceived ability predicted which type of goal was adopted in this particular learning environment; when perceived ability was high, children tended to select a mastery goal but when perceived ability was low, they tended towards performance goals.

In the individual and collaborative contexts, there was a greater degree of variation in the goals children chose, which might suggest that children were being directed more by their own goal preferences than any over-riding contextual influence. However, only four children were guided consistently by the same goal. For the remainder, neither group context nor perceived ability emerged as a primary organiser of behaviour. These results suggest that children may not be guided consistently by personal goal orientations, as dispositional models have proposed.

However, this study had several limitations which need considering before any conclusions are reached.

Firstly, as variables are categorical and the sample size relatively small, the data lacks statistical power. Secondly, the lack of consistency in children's responses to the scenarios may indicate random responding. Comparisons between teacher-rated scenarios, the behavioural task choice measure and the self-report scenarios suggest that an accurate measure of goal orientation was obtained for at least two contexts (individual: high perceived-ability and collaborative: low perceived ability) as responses were consistent across measures. However, further studies are needed to assess how consistent results are across samples.

3. Study 2

The main aim of this study was to examine the extent to which the findings observed above would be replicated in a sample of a similar age from a different school. In this study self-report scenarios were administered in a group testing condition.

3.1. Method

3.1.1. Participants

Nineteen (12 female, 7 male) children from Years 4 and 5 were selected from a different primary school in the same city. These children were again selected on the basis of reading profiles, due to participation in an unrelated study. Ages ranged from 9;0 years to 11;8 with a mean age of 10;2 years.

3.1.2. Achievement goal scenarios

Due to constraints on the amount of time allocated to testing by the school, it was necessary to use a shorter version of the scenarios, appropriate for group testing. Three out of the six original scenarios were therefore selected, one for each of the three group contexts. Participants were asked to respond to the scenario once in relation to their high perceived-ability subject choice and then again in relation to their low perceived-ability choice. This allowed a more direct contrast of high and low ability. Scenarios 1, 4 and 5 were selected from the original six (See Appendix A) because of their higher level of consistency with other measures observed in Study 1.

3.1.3. Procedure

The achievement goal scenarios were administered as part of two group testing sessions. Two female researchers conducted the testing in class. Each participant was given a response sheet to indicate their best and worst subject out of a selection of five (literacy, history, science, geography and maths). Each of the three scenarios selected for this study were then read out twice, once for high perceived-ability and a second time for low perceived ability. The researcher stressed there were no right or wrong answers and that children may give the same or a different answer in response to each scenario. In addition, in order to reinforce the distinction between the high- and low-ability levels and to ensure correct completion, children used different coloured pens for their high- and low-ability responses.

3.2. Results

3.2.1. Achievement goal stability across scenarios

As seen in Figure 3, no children were classified as having strong mastery- or performance-orientations. A small percentage of children (10.5%) displayed a moderate performance orientation. However, the majority (57%) showed only weak preferences for mastery or performance goals and 31% showed no preference at all. Overall there was more of a tendency towards performance goals than mastery goals.

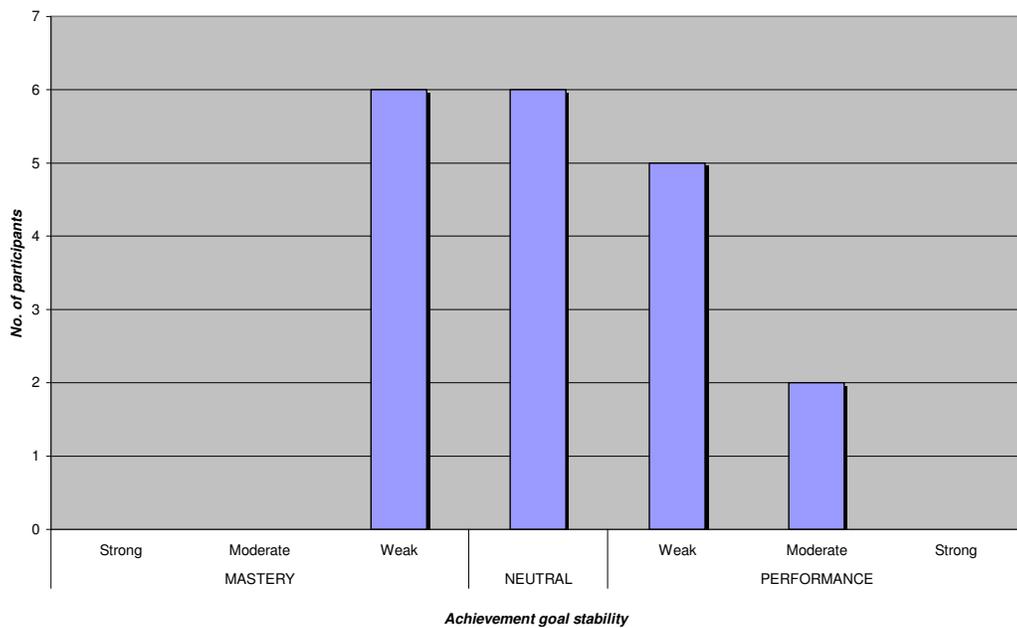


Figure 3. Strength of achievement goal orientation based on consistency across all scenarios.

3.2.2. Interactive context and perceived ability

Figure 4 shows the total number of mastery and performance responses made within each context. In this sample, a preference for performance goals was evident in the individual learning scenarios irrespective of perceived ability. A binomial distribution test revealed this preference to be significant for the high-ability scenario ($p = 0.04$) but not for the low-ability scenario ($p = 0.1$). A significant preference for mastery goals was evident in the high-ability whole class condition ($p < 0.001$). However, there was no preference for either goal in the low-ability whole-class context, with a similar number of each goal response. In the collaborative scenarios, there were no significant preferences for either goal type.

As in Study 1, further analysis of within-context variation was undertaken, by group context and perceived-ability level. Given the preference for performance goals in both individual scenarios, it was expected that a significant degree of consistency would be evident between the two

ability levels. However, this was not the case, with only 10 children giving the same goal response (9 performance and 1 mastery). This pattern was the same for the collaborative context, in which 12 children gave consistent goal responses (5 mastery and 7 performance) across both ability levels while 7 gave inconsistent responses. In the whole-class scenarios 7 children gave consistent responses across both (all mastery) while 12 gave different responses across ability levels. However, what is interesting to note is that of the 12 who changed their goal responses across whole-class scenarios, 10 selected a mastery goal in the high perceived-ability context and a performance goal in the low-ability context. This is more in line with the pattern of responses observed in Study 1.

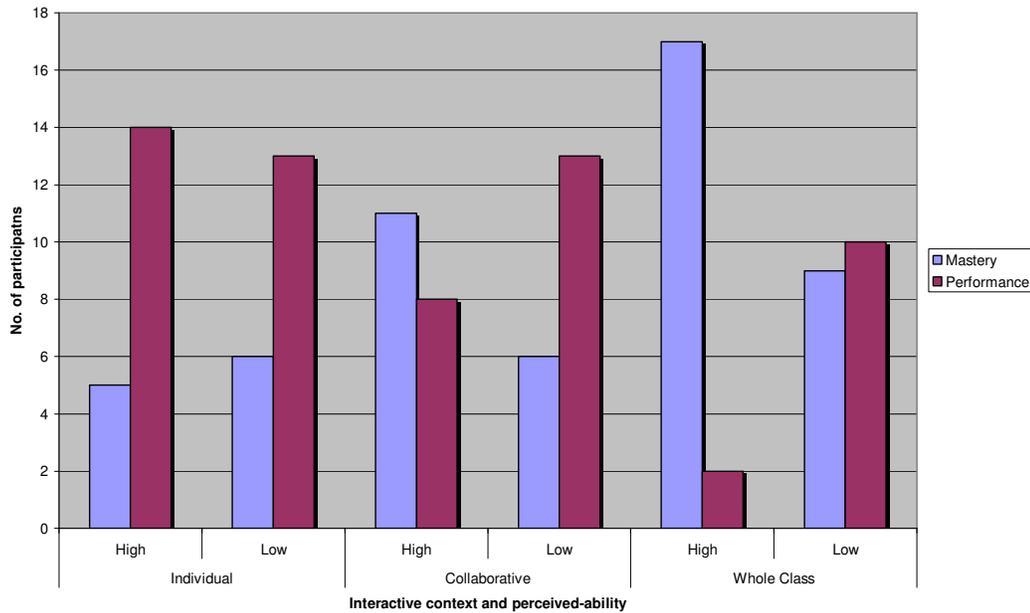


Figure 4. Number of mastery and performance responses given for each scenario

3.3. Discussion

No child in this sample could be classified as oriented towards one particular goal orientation across all contexts, replicating the findings of Study 1. However, in this sample more children displayed a weak or moderate tendency towards performance goals than towards mastery goals, compared to the even distribution of goal preferences in Study 1. In particular, performance goals were preferred in the individual scenarios regardless of perceived ability. The overall preference for performance goals in this sample suggests a wider influence on children's responses, indicating some support for Ames (1992) model that classroom practices shape children's goal preferences.

In this sample the whole-class high perceived-ability scenario had the same influence on children's goal choice as it did in Study 1, in which there was a significant preference for a mastery goal. In this sample half of the children went on to indicate they would not do this when they believed their ability to be low.

Although not significant, low perceived-ability did seem to play a role in the adoption of performance goals overall as a preference for performance goals was evident in all the low perceived-ability scenarios. However, the lack of consistency in individual children's goal preferences across the scenarios suggests this result may be due to random responding.

The results of this study replicate some of the findings of Study 1. However, they also suggest that for this sample, contexts other than the whole-class environment had an organising influence on behaviour. Urdañ et al.(1999) note that policies and practices in both schools and classrooms can make mastery or performance goals more salient to children and teachers. In this school there may be more of an emphasis on performance goals in general, and particularly in terms of individual achievement. However, the possibility of random responding needs further investigation. In addition, due to the female bias in both samples, gender effects have not been addressed. In the light of these limitations a further study was undertaken with a larger gender-balanced sample. This study included an additional standardised measure of goal orientation in order to determine the accuracy of the learning scenarios in predicting goal-oriented behaviour.

4. Study 3

The results of the previous two studies suggest that context-specific information is an important influence on children's achievement goal adoption. Some contexts influence most children in the same way and produce clear patterns of goal preference. Others, however, influence individuals in different ways. In addition, some participants are less influenced by context than others and appear to access an underlying orientation which is not sensitive to contextual cues, although such children are in the minority. Furthermore, the influence of particular contexts was different for each of the previous two samples. In the current study we use a large sample and include an additional achievement goal assessment in order to measure the consistency of the achievement goal scenarios with a more established goal measure. In this study the scenarios were computerised.

4.1. Method

4.1.1. Participants

Sixty-one (30 male; 31 female) Year 4 and 5 pupils participated in this study from a large primary school in the same city as the previous studies. Ages ranged from 8;2 years to 10;3 years, with a mean age of 9;3 years. Each year group had three classes and 10 children were randomly selected from the register from each of the six classes.

4.1.2. Measures

In this study the original six learning goal scenarios were used with minor adjustments made using feedback from participants in the previous two studies. The scenarios were computerised and the order in which they appeared was randomised. As in Study 2 participants chose their best and worst subject from a list of six. The software then inserted their choice of subject in the appropriate scenarios.

4.1.3. Validity measures

We included the original PALS questionnaire in this study (see Appendix B) in order to compare goal assessments based on our scenario method with a standardised achievement goal measure. As the PALS questionnaire measures general goal orientation we compare PALS scores with our assessment of achievement goal stability measured across all six scenarios.

4.1.4. Procedure

Testing took place in a quiet room in the school and was conducted by a female researcher. The scenarios were administered with the use of laptop computers and headphones with instructions and scenarios read out with corresponding text on the screen. Two participants were taken out of class together but completed the scenarios individually on separate laptops. The scenarios took approximately 15 minutes to complete.

4.2. Results

4.2.1. Achievement goal stability across scenarios

As seen in Figure 5, 16% of this sample could be classified as having a strong personal goal orientation. A large proportion of children displayed a moderate (31%) or weak (36%) goal orientation, most of whom showed a preference for mastery goals. The remaining 16% were classified as neutral, giving an equal number of mastery and performance responses. Overall, this sample showed more of a tendency toward mastery goals than performance goals. Goal stability was not influenced by gender, as an equal number of boys and girls were consistent as inconsistent in their goal responses.

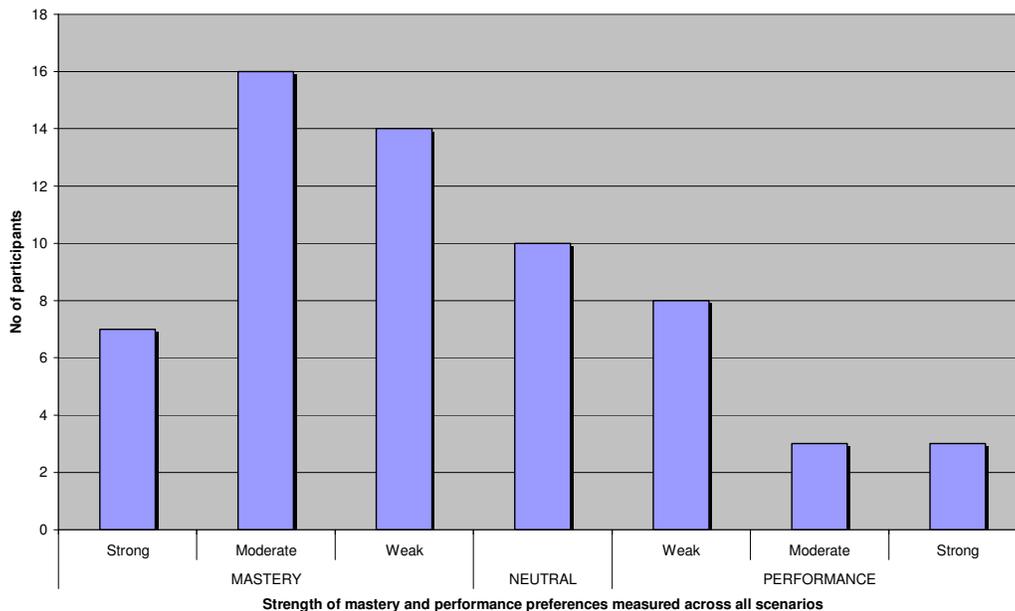


Figure 5. Strength of achievement goal orientation based on consistency across all scenarios

4.2.2. Interactive context and perceived ability

As seen in Figure 6, there was a clear preference for mastery goals in four out of the six scenarios. Binomial distribution tests revealed this preference was significant in the individual and whole-class contexts for both ability levels (all $ps < 0.01$). The collaborative scenarios were the only ones in which there was a preference for performance goals. This was significant in the low perceived-ability condition ($p = 0.004$).

Given the preference for mastery goals in the individual and whole-class contexts the consistency of goal adoption across perceived-ability scenarios was significant ($ps < 0.001$). In the individual scenarios 45 children (39 mastery, 6 performance) gave consistent goal responses across both perceived-ability levels while 16 gave inconsistent responses across ability levels. In the whole-class context 47 children (40 mastery, 7 performance) gave a consistent goal response across both perceived-ability scenarios while 13 gave inconsistent responses.

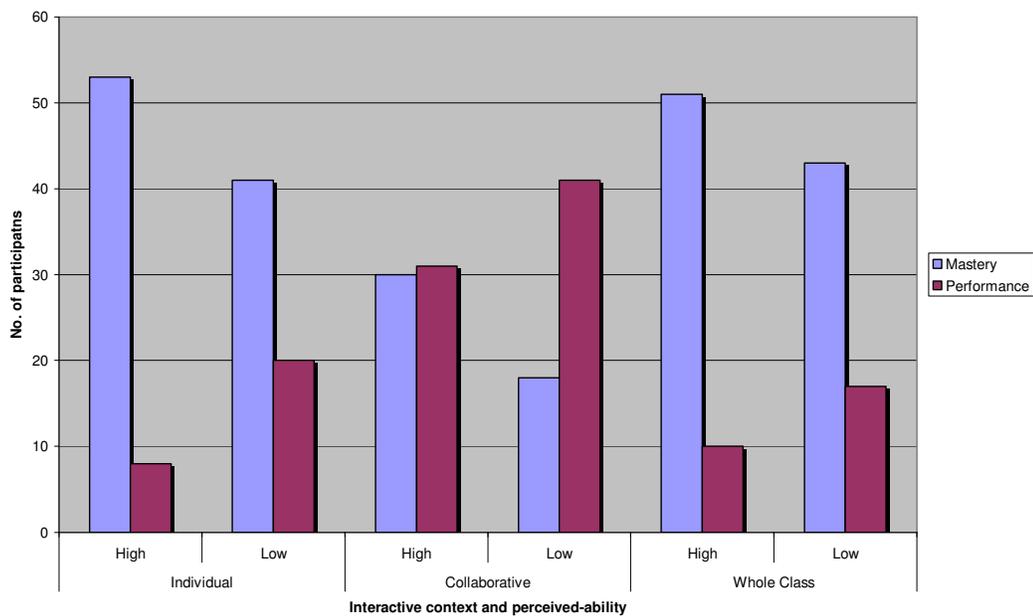


Figure 6. Number of mastery and performance responses given for each scenario

Therefore, participants were more likely to adopt mastery goals in both high- and low-ability contexts across individual and whole-class scenarios than they were to change their goal preference. However, this was not the case in the collaborative scenarios where children were as likely to remain consistent as they were to change their goal choice, with 32 children (10 mastery, 22 performance) giving consistent responses and 27 giving inconsistent responses.

4.3. Validity of Achievement Goal Scenarios

4.3.1. Patterns of Adaptive Learning Scales

The PALS questionnaire measures achievement goals on 3 separate dimensions, with participants receiving a separate mastery, performance-approach and performance-avoidance score. In order to compare these more easily with the achievement goal scenarios, which use a dichotomous mastery-performance split, the approach and avoidance dimensions on the PALS questionnaire were combined to give a single performance score, a method used by Pintrich (2000).

Each item on the PALS is measured on a 5 point likert scale (1 = strongly disagree and 5 = strongly agree). A mean score is calculated for all mastery and all performance items, as shown in Table 2. A paired samples t-test showed that the mastery mean was significantly higher than the performance mean ($t(51) = 11.12, p < 0.001$). Therefore, according to the PALS questionnaire children in this sample held significantly stronger mastery goals than performance goals. This general pattern of goal orientation is consistent with that observed using the achievement goal scenarios. Figure 5 shows that using the scenario method, there was a general bias towards mastery goals with a higher number of children giving consistent mastery responses than consistent performance responses.

Table 2. Mean mastery and performance scores measured by PALS

	Mean (SD)
Mastery	4.23 (.6)
Performance	2.99 (.79)

The general pattern of mastery and performance goals measured with the PALS questionnaire appears to support, in broad terms, the general pattern of goal distribution measured with the scenarios. Further analysis was undertaken to determine whether the strength of orientations, determined by the level of consistency across scenarios, was consistent with the strength of mastery and performance goals measured on the PALS scales. PALS scores were converted into a single mastery performance scale by subtracting the mastery score from the performance score and placing the converted score on a scale with a mid point of 10¹. Scores above 10 indicate a performance tendency and scores below a mastery tendency. This single PALS score was then correlated with the overall mastery/performance score from the achievement goal scenarios (0-6) where lower scores indicated a tendency toward an overall mastery preference and higher scores a tendency towards an overall performance preference. The converted PALS scale and the achievement goal scenario scores were positively correlated ($r = .28, p = 0.051$), although the correlation was weak.

¹ The selection of 10 was random. Any number which would have brought all scores above zero could have been used.

4.4. Discussion

There are three main differences in the results observed in this study from those of the previous two. Firstly, in this larger sample we observed a greater degree of consistency in children's responses with a small percentage indicating strong goal preferences across all scenarios. Secondly, there was a clear preference for mastery goals overall with the majority of children tending towards this orientation. There was a significant preference for mastery goals in the individual and whole-class contexts for both high- and low-ability levels. The consistency of responses across these four scenarios suggests that children were influenced by an overarching meaning system as opposed to randomly selecting a response. This was supported by the general pattern of goals measured via the PALS questionnaire. Thirdly, the collaborative scenarios led children in this sample to select performance goals. This was not a pattern observed in previous studies and it stands in contrast to the overall mastery tendency.

5. General Discussion

5.1. Integrating dispositional and situational models of achievement goals

Across all three of the studies we found that goal orientations were determined by different factors for different children. These results suggest that describing individuals as mastery- or performance-oriented may only be accurate when describing a minority of children. Across all three samples under a third of all children displayed a strong or moderate goal tendency. The remainder displayed either neutral or weak patterns of goal adoption across each of the six contexts we examined. In support of Pintrich's (2000) model this suggests that some individual's use personal or underlying goal orientations in determining achievement goal adoption across contexts while others use contextual cues in the environment to direct their goal choices. Harter and Jackson (1992) found a similar effect in their study of intrinsic and extrinsic motivation. They identified three groups of children when measuring motivational tendencies across a variety of school subjects: those who were intrinsically motivated in most subjects, those who were extrinsically motivated in most subjects and those who were intrinsically oriented in some subjects and extrinsically oriented in others. Our results suggest that achievement goals manifest themselves in a similar way.

These results may explain, in part, theoretical inconsistencies which arise from research framed by either strictly dispositional or strictly situational models. For example, given that most children seem not to have strong tendencies towards either mastery or performance orientations, experimental manipulations (Butler & Neuman, 1995b; Dweck & Leggett, 1988; Elliot & Dweck, 1988; Mueller & Dweck, 1998) are likely to be successful. However, the fact that *some* children show strong goal tendencies is also likely to lead to differences in the way children interpret the same learning context and therefore explain the variation in children's perceptions of the same environment (Ames & Archer, 1988; Urdan, 1999). In addition, achievement goal scales generally find nominal differences between mastery and performance scores (Anderman et al., 2003). In the light of our results, these small effect sizes may be due to the low percentage of children in any one sample that have strong goal tendencies. Assessing goal orientation as a general approach to learning may therefore not accurately reflect the true nature of achievement goals and how they manifest in different children. For example, in Study 3 data from both the PALS questionnaire and our learning scenarios were consistent in broad terms, i.e., in identifying a general pattern across the whole sample. However, some children in that sample did not conform to a mastery approach and, furthermore, most children had a preference for a performance goal in at least one context.

Our results suggest that when addressing children's achievement goals it may be useful to distinguish between those children who show consistent patterns of goal adoption and therefore are disposed towards a particular approach to learning and those children who are more variable in their goal preferences and therefore may be more open to contextual influences.

5.2. The role of interactive, perceived ability and school context

When examining the nature of contextual influence two findings emerged. Firstly, in a similar vein to our findings above, we observed that some contexts were inherently goal-oriented and had an organising effect on behaviour while others did not appear to present overarching goal-oriented cues. Secondly, we observed contextual influences on both a micro (task) and macro (school) level.

In all three studies the whole-class high-ability context led children to endorse mastery goals over performance goals. As Meece et al. (1988) suggest, whole-class teacher-controlled environments may have clearer rules for behaviour, determined by teacher expectations and shared norms, and therefore may leave less scope for children's own self-regulation. Importantly, we found that this type of context interacted with perceived ability where only high perceived ability was associated with mastery goals. Research has found that self-perceptions of ability can moderate the effects of achievement goals (Dweck & Leggett, 1988; Elliot & Dweck, 1988; Jagacinski et al., 2001). The results from our studies suggest that the relationship between these two variables may be bidirectional, and that perceived ability may also have a moderating role in the adoption of particular achievement goals.

While the individual learning contexts did not have a universal influence, within each sample responses to individual scenarios shared biases consistent with the overall bias of that sample. In Study 1, there was no mastery or performance trend in the sample as a whole which was reflected in the individual scenario responses. In Study 2, the overall bias towards performance goals was reflected in the performance preferences in both individual scenarios. In Study 3, the overall mastery bias was again reflected in a mastery preference across both individual scenarios. This suggests that outside of the constraints of whole-class work, children may be influenced by their specific school culture when undertaking individual work.

Responses to the collaborative scenarios were more variable and although there was a performance bias in the low perceived-ability contexts across all samples, this was only significant in Study 3. This suggests that collaborative work may be less subject to either school biases or the organised structure of whole-class work. This may be due to a greater variation in how teachers use collaborative work in the classroom and therefore it may be an activity associated with fewer norms and rules for behaviour. Collaborative activities may provide a fitting context in which to further examine variation in mastery and performance behaviour as it appears free of an inherent goal influence.

5.3. Limitations and directions for future research

While the learning scenarios we developed enabled us to measure within- and between- context variation, there are several limitations to this method. Firstly, forced choice methods exclude other behaviours which may more accurately reflect a child's response to a particular situation (Harter & Jackson, 1992). By imposing prescribed behaviours we may therefore have led children to respond in ways they would not, in reality, have behaved. Secondly, forcing a categorical response resulted in the data losing power in terms of statistical analysis but also in terms of assessing the degree to which children endorsed mastery or performance goals. Due to the age of our sample we wanted to avoid children having to rate their behaviours on a scale. However, this meant we could not assess the strength of individual mastery and performance goals in any particular context. We suggest that future work may include behavioural observation in order to create a richer picture of children's behaviour in real contexts.

The differences we observed in the general biases towards mastery or performance goals between each of the three samples suggested that children's goal orientation may be determined, not only by classroom influences, but also by the wider culture of different schools. Further research might explore what specific aspects of school ethos influence children's motivational tendencies. For example, the introduction of SATS into the primary classroom has seen the level of pressure on children's performance increasing and perhaps with it an emphasis on performance goals. The extent to which this has an impact on individual tendencies may however depend on each school's implementation of current policy.

Appendix A

Self-report Scenarios

1. Individual: High-perceived ability

Imagine that you are in _____ class. It's the end of the day and your teacher gives you some homework that you have to do on your own. For homework you have to complete a worksheet from one of your books. This book has lots of different worksheets in it and it has the answers in the back. The teachers says that the worksheet is quite difficult but that you should try and do it by yourself, so she can see how much you have learnt. Now imagine that when you are doing the worksheet you get stuck on a question which is really difficult. What do you think you would do if this happened to you?

Response choice:

Have a guess and try my best but I wouldn't look at the answers (mastery)

Have a guess at first but then I would look to make sure I was right (performance)

2. Individual: Low-perceived ability

Imagine that you are in your _____ lesson. Your teacher has just finished teaching your class something that is quite difficult. Now she wants each of you to write down a short summary of what you have just learnt. You have to do this by yourself and then you have to give this summary to your teacher so she can mark it and see if you understand. You have 15 minutes to do this by yourself. Your teacher says that even though its quite hard you should try and do it just from what you remember but if you want to you are allowed to look at your books. When you start you find it really difficult. What do you think you would do if this happened to you?

Response choice:

I would use my books to help me (performance)

I would just write down what I could remember (mastery)

3. Collaborative: High-perceived ability

During _____ class, your teacher gives you and a partner some work to do together. You have to work together and complete a worksheet on the computer, which you then are going to decorate with pictures and print out to show your teacher. When you find the programme on the computer you see that you can choose between two different worksheets. You and your partner see that one of the worksheets looks a little bit easier and the other is a bit more difficult. You have to decide together which worksheet you are going to do. Which one do you think you would like you and your partner to choose?

Response choice:

The easy worksheet (performance)

The difficult worksheet (mastery)

4. Collaborative: Low-perceived ability

Now I want you to imagine that you are in _____ class. Your teacher gives you and a partner some work to do together. You have to make a poster with drawings and writing which will be put up on the wall outside your classroom. Your teacher says that you and your partner can choose what to do your poster on. So the first thing you and your partner have to do is decide what to do the poster on. You could either do the poster on a topic that you've only just started learning about and so you would learn something new from it or you could do it on a topic you've already finished learning about which would be good practice.

Response choice:

A topic we already know lots about (performance)

A new topic that we could learn about (mastery)

5. Whole class: High-perceived ability

Imagine you're in class during _____. Your teacher tells the whole class that you are going to start a new topic. Before she begins she is going to ask the class a few questions to see how much you already know. Imagine that you put up your hand up but you give the wrong answer. The teacher tells the class the right answer and then carries on. What do you think you would do if this happened to you?

Response choice:

I would try and answer more questions (mastery)

I wouldn't answer any more questions (performance)

6. Whole Class: Low-perceived ability

During your _____ lesson the teacher tells the class that she wants you to be the teacher for a while. She says that at the end of the week each of you is going to have a chance to come up to the front of the class and talk about a topic that you can choose. She gives you a list of topics to choose from at the beginning of the week so you have time to find out about it. What sort of topic do you think you would like to choose?

Response choice:

I would choose a topic which I already know lots about (performance)

I would choose a new topic so I could learn something new (mastery)

Appendix B

Patterns of Adaptive Learning Scales (Midgley et al., 2000)

Mastery items:

1. It's important to me that I learn a lot of new things this year.
2. One of my goals in class is to learn as much as I can.
3. One of my goals is to master a lot of new skills this year.
4. It's important to me that I thoroughly understand my school work.
5. It's important to me that I improve my skills this year.

Performance-Approach items:

1. Its important to me that I look clever compared to others in my class.
2. One of my goals is to show others that school work is easy for me.
3. It's important to me that the other pupils in my class think I'm good at my schoolwork.
4. One of my goals is to look smart in comparison to the other pupils in my class.
5. Its important to me that the teacher doesn't think I know less than the others in my class.

Performance-Avoidance items:

1. One of my goals in class is to avoid looking like I have trouble doing the work.
2. One of my goals is to keep others from thinking I'm not clever in class.
3. It's important to me that I don't look stupid in class
4. One of my goals is to keep others from thinking I'm not clever in class.

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