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The Influence of Teacher Feedback on Children's Perceptions of Student-Teacher Relationships

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Abstract

Background. Teachers can deliver feedback using person ("you are clever") or process terms ("you worked hard"). Person feedback can lead to negative academic outcomes, but there is little experimental research examining the impact of feedback on children's perceptions of the student-teacher relationship.

Aim. We examined the effects of person, process and no feedback on children's perceptions of their relationship with a (fictional) teacher following success and failure.

Samples. Participants were British children (145 aged 9–11 in Experiment 1 and 98 aged 7-11 in Experiment 2).

Method. In Experiment 1, participants read three scenarios where they succeeded and received one of two types of praise (person or process), or no praise. Participants then read two scenarios where they failed. In Experiment 2, participants read that they had failed in three tasks and received one of two types of criticism (person or process), or no criticism. Participants then read two scenarios where they succeeded. They rated how much they liked the teacher and how much they felt that the teacher liked them.

Results. Children felt more positive about the student-teacher relationship following success than failure. Type of praise did not influence perceptions of the student-teacher relationship following success or failure. However, person criticism led children to view the student-teacher relationship more negatively following failure and maintain this negative view following the first success.

Conclusions. Success appears to be important for developing positive student-teacher relationships. In response to failure, teachers could avoid person criticism which may negatively influence the student-teacher relationship.

Keywords: feedback; student-teacher relationship; praise; criticism

During the school years teachers play a pivotal role in the lives of children. They provide support and information to help children form their self-concept, and establish children's expectations about school and academic performance (Entwhistle, Alexander, Pallas & Cardigan, 1987). A good student-teacher relationship is associated with positive outcomes such as better school adjustment (Pianta, Steinberg & Rollins, 1995), positive social functioning (Hamre & Pianta, 2001) and high levels of academic achievement (Roorda, Koomen, Spilt, & Oort, 2011). In contrast, a poor student-teacher relationship is associated with negative outcomes such as school avoidance, low levels of self-directed learning and low levels of performance in the classroom (Birch & Ladd, 1997; Birch & Ladd, 1998). The importance of a positive student-teacher relationship cannot therefore be overstated.

Shaping teachers' behaviour, such as training them to better understand children's emotional needs, can positively influence children's perceptions of student-teacher relationships (Abry, Rimm-Kaufman, Larsen & Brewer, 2013; Hughes, Cavell & Jackson, 1999; Hamre & Pianta, 2001; Hamre & Pianta, 2005). However, such interventions often focus on "problem" children, with whom teachers struggle to build positive relationships. They are also often time intensive, and involve setting aside time each week for children and teachers to interact as a dyad. In modern classrooms, sometimes with class sizes over 30, this can be unrealistic. It is therefore vital to understand how student-teacher relationships can be improved in the routine course of the school day.

One important factor that may influence the student-teacher relationship is feedback (DePaulo & Bell, 1996). Feedback gives students the opportunity to learn about what the teacher thinks of their work, and according to Hattie and Timperley (2007), it is one of the most powerful influences on learning and achievement. Kluger and DeNisi's (1996) meta-analysis found that the average effect size of feedback on school performance was 0.38.

According to Dweck (1999), feedback can be delivered by referring to the *person* or the *process*. Person forms of feedback attribute the outcome to stable factors such as ability levels (e.g., "you're really good at maths"). In contrast, process forms of feedback attribute the outcome to unstable factors such as effort (e.g., "you tried really hard at this"). Previous research has documented the impact of feedback on academic factors such as perceived performance, affect and persistence (e.g., Dweck, 1999; Mueller & Dweck, 1998; Skipper & Douglas, 2012). Results suggest that person forms of feedback lead to more negative outcomes following failure than process forms. Children who received person praise or criticism were more likely to feel negative about their performance and themselves and were less likely to persist and improve following failure – in other words they displayed a *helpless response* (Dweck, 1999). In contrast, those who had received process feedback showed a more positive response, feeling happier about themselves and their performance and continuing to persist – these pupils displayed a *mastery response* (Dweck, 1999). It is thought that process feedback, with its emphasis on effort, promotes a growth mind-set, implying that future effort can lead to success. In contrast, person feedback is said to promote a fixed mind-set of success since it focuses on ability levels that can be difficult to change (Dweck, 1999).

Although the effects of feedback on academic outcomes are well known, we know less about the effects of feedback on student-teacher relationships. Receiving feedback regarding effort and ability may influence the extent to which students engage develop rapport with their teacher. Also, different types of feedback may inform students' judgements of the extent to which the teacher likes them personally. However, despite the wealth of research investigating the impact of feedback on academic factors, little research has examined the impact of feedback on the student-teacher relationship.

Effects of Praise on Student-Teacher Relationships

It has been suggested that praise is vital to build a strong student-teacher relationship (Brophy, 1981), but Burnett (2002) found that levels of teacher praise had little effect on perceived relationship quality. Therefore the association between praise and student-teacher relationships is unclear. One reason for this may be that praise can take different forms (Baker, 1999). For example, person feedback may be more valued by some students (Marsh, 1990; Dohrn & Bryan, 1994) but others may prefer process feedback (Burnett, 2001; Merrett & Tang, 1994). Furthermore, Burnett (2002) found that students who perceived that they regularly received process feedback felt more positive about the student-teacher relationship. On the other hand, those who felt that they received high levels of person feedback did not.

Based on Burnett's (2002) findings, it is possible that process praise may lead to more positive outcomes than person praise. Because person praise refers to traits, it suggests that behaviours will be repeated in the future (Wigboldus, Semin & Spears, 2000; Wigboldus & Douglas, 2007), potentially putting pressure on students to maintain good performance. In contrast, process praise emphasises effort levels, suggesting that the teacher has noticed and valued the effort but does not necessarily expect success in future. As for academic performance, it may also be the case that no praise at all is better for perceptions of the student-teacher relationship than person praise (Skipper and Douglas, 2012).

It is also likely that teacher praise will influence children's perceptions of the student-teacher relationship following subsequent failure. Research suggests that person praise leads to a helpless academic response to failure (Dweck, 1999). These negative feelings are therefore likely to lead children to feel more negative about their relationships with their teacher. Children may also be more likely to infer that they have disappointed their teacher if they do not succeed, since by using person praise the teacher has indirectly implied that they expect success in future. On the other hand, process praise, or the absence of praise, do not

lead to a helpless response (Dweck, 1999; Skipper & Douglas, 2012) and may therefore be less likely to have a negative impact on perceptions of the student-teacher relationship.

Effects of Criticism on Student-Teacher Relationships

Among teachers there is a tendency to emphasise positive rather than negative performance information (DePaulo & Bell, 1996). This leads children to expect that teachers will be more forthcoming with positive than negative feedback (Heyman, Fu, Sweet & Lee, 2009). However, criticism is important for learning as it gives children a true picture of their performance and an opportunity to improve. If they routinely receive praise for their achievements but do not receive negative feedback on their failures, they may have inflated and unrealistic understandings of their abilities (Dweck, 1999; Twenge, 2006).

As is the case for praise, the association between criticism and student-teacher relationships is not yet well understood. Some research suggests that criticism is associated with more positive student-teacher relationships (Baker, 1999). Likewise, Meyer (1992) suggested that when children received criticism from the teacher they inferred that their teacher has high expectations of them and expected them to succeed. However, other research has found the opposite, where children who felt that they received more negative feedback were less likely to initiate interactions with their teachers (Cooper, 1977) and were more likely to report a negative student-teacher relationship (Burnett, 2002).

These disparate findings may be complicated further by the type of criticism given. Person criticism which attributes failure to traits may be viewed as unfair by the child (Heyman & Legare, 2005) and may lead them to dislike their teacher. In contrast, process criticism may be viewed as formative feedback, illustrating what children need to do in order to succeed in the future, and may have a positive impact on student-teacher relationships. This may also be the case for objective feedback (e.g., just receiving a mark). This theoretical pattern is yet to be examined experimentally with children. However, research

with older students found that upon receiving person criticism, undergraduates were more likely to avoid the situation or even actively seek conflict with the critic, in comparison to when they had received process-oriented criticism (Baron, 1988).

Further, the longer-term impact of criticism on subsequent successes is not known. If praise can influence responses to subsequent failures then criticism could influence responses to subsequent successes (Dweck, 1999). We could expect that when children succeed after a failure they will show more positive perceptions of the relationship. This is because success seems to be associated with a positive student teacher relationship (Lerner, Lerner & Zabski, 1985; Hamre & Pianta, 2001). However, criticism threatens social-relational goals (Heyman & Legare, 2005), and this threat may be stronger after person criticism. Criticism that refers more to process and effort, or the absence of criticism, are unlikely to be as harmful to the student-teacher relationship.

The Current Research

The aim of the current research was to examine the impact of feedback on student-teacher relationships. We adopted an experimental approach where children were exposed to different types of feedback and were asked to rate their relationship with a fictional teacher. This approach addresses some of the limitations of existing research. First, existing research examining the impact of feedback on student-teacher relationships has been largely correlational (e.g., Burnett, 2002; Baker, 1999). It is therefore impossible to infer whether feedback leads to positive student teacher-relationships or whether positive student-teacher relationships lead teachers to deliver feedback in different ways. An experimental design also allows us to control for extraneous variables such as existing relationships between students and teachers. Whilst experimental control may come at the expense of a certain level of ecological validity, we can examine the effect of feedback on perceived student-

teacher relationships and do so in a controlled manner that reduces the potential impact of other external factors.

In addition, much previous research has compared children's responses to different forms of feedback but has not included a control condition where children experience success or failure but do not receive feedback. It is therefore impossible to infer whether different sorts of feedback have a positive effect, a negative effect, or even whether any sort of feedback is better than none (Skipper & Douglas, 2012). Including a control group allows us to disentangle whether the effects of feedback are due to the positive feelings engendered by success (or negative feelings associated with failure), or whether they are specific to receiving different types of verbal feedback from the teacher.

Experiment 1 examined the impact of praise (person, process or no praise) on children's perceptions of the student teacher relationship following success and subsequent failure. Experiment 2 mirrored this design and examined the impact of criticism (person, process or no criticism) on children's perceptions of the student teacher relationship following failure and subsequent success. In both experiments, children were presented with hypothetical scenarios where they succeeded or failed and received feedback from a fictional teacher. The teacher was always presented as female. This decision was made because 84% of UK primary school teachers are female and the scenario therefore reflects the experience of the majority of UK primary school students (Department for Education, 2013). Further, scenario-based experiments have often been used to allow children to indirectly experience feedback and measure their responses (e.g., Skipper & Douglas, 2012; Kamins & Dweck, 1999) and this method overcomes the ethical implication of directly criticising children. In each experiment, the dependent measures were (a) children's' liking for the teacher and (b) children's perceptions of how much their teacher liked them.

In Experiment 1, it was hypothesised that following success and subsequent failure, children who received person praise would feel more negative about the student-teacher relationship than those who received process praise or no praise. In Experiment 2 it was hypothesised that following failure and subsequent success, children who received person criticism would feel more negative about the student-teacher relationship than those who received process or no criticism.

Experiment 1

Method

Participants and Design

One hundred and forty five British children aged nine to 11 ($M = 9$ years 8 months; 66 girls and 79 boys) were recruited from schools in the South East of England. One hundred and forty two were White British, two were South East Asian and there was one missing value. Children were randomly divided into three experimental groups (praise: person/process/control).

Materials and Procedure

Consent was obtained from the head teacher, parents and children. Children worked through a paper questionnaire alone during class time. They were asked to vividly imagine themselves as the child depicted in five written scenarios, where they performed a task and then received feedback from their teacher "Mrs Billington". An example scenario is as follows:

"In English you were reading an adventure story. At the end of the lesson Mrs Billington set the class some homework and everyone was asked to write their own adventure story to bring to class the next day. You thought very carefully about your story and you decided to write about some people living on a boat. You imagined what your characters and

your boat would look like. You then wrote your story very carefully, trying to make the story real and exciting. You thought your story was really good."

The first three scenarios described successes followed by objective performance feedback (e.g., "you got a high mark") and after each scenario children received either person (e.g., "you're really good at English"), process (e.g., "you worked really hard at this") or no further feedback. The final two scenarios depicted failures (e.g., "you only got 3 out of 10 correct") and following these children received no feedback.

After each scenario, children answered two questions:

1. How much do you like Mrs Billington?

2. How much do you think Mrs Billington likes you?

These measures were answered on a five-point smiley face scale ranging from "not at all" to "very much". After the experiment all children were thanked and debriefed.

Results and Discussion

We first tested for any effects of scenario number and gender. A repeated-measures ANOVA comparing the impact of feedback (person/process/control) on each of the three successes revealed no effects for either dependent measure with respect to scenario number. Two (gender: male/female) x 3 (feedback: person/ process/ control) ANOVAs revealed a main effect for gender, in that girls liked their teacher more following success, $F(2, 143) = 10.19$, $p = .002$. However, girls did not perceive that their teacher liked them more. Crucially, the interaction between gender and feedback type was not significant for either dependent measure. We therefore calculated means for the three successes and collapsed across gender.

We next tested the hypothesis that feedback type would influence responses following success. Means, standard deviations and inferential statistics are presented in Table 1. One-way ANOVAs (feedback: person/process/control) revealed no effect of praise type on

children's liking for the teacher, or for perceptions of the teacher's liking for them. All children responded equally positively regardless of feedback condition.

We then examined responses following failures. We conducted a paired samples t-test comparing changes in the perceived student-teacher relationship from success three to failure one. This revealed that children's liking for the teacher decreased $t(142) = 8.01$, $p < .01$ as did their perceptions of the teacher's liking for them $t(142) = 5.83$, $p < 0.01$. Therefore, failure seemed to lead children to view the student-teacher relationship more negatively.

Finally we examined the impact of feedback on responses to failure 1 and failure 2. These were considered separately because research suggests that prior praise can influence responses to a single and repeated failure differently (Skipper & Douglas, 2012). Testing for any effects of gender, 2 (gender: male/female) x 3 (feedback: person/process control) ANOVAs revealed no main effects of gender after failure 1. However, following a second failure, there was no difference in liking for the teacher, but girls perceived their teacher to like them more than boys $F(1, 141) = 3.99$, $p = .048$. However, there was no interaction between feedback type and gender and we therefore collapsed across gender.

Testing the prediction that feedback type would influence responses to subsequent failure, one-way ANOVAs revealed that feedback did not influence the perceived student-teacher relationship following failure1 or failure 2, see Table 1.

Results from Experiment 1 therefore revealed that type of praise did not influence children's perceptions of the student-teacher relationship. Contrary to our hypotheses, when children were succeeding they liked their teacher and felt that she liked them equally regardless of whether they received person, process or no praise. However, following failure all children reported a more negative perception of their relationship with the teacher regardless of the feedback they had received. Potentially therefore, children's relationship

with their teacher may be damaged simply by experiencing failure. To explore this question further, Experiment 2 directly examined the effect of failure and different forms of criticism on perceptions of the student-teacher relationship.

Experiment 2

Method

Participants and Design

Participants were 98 British children from the South East of England, aged between seven and eleven (52 boys, 45 girls, 1 missing rating, $M = 8.80$, $SD = 1.22$). Eighty six were White British and 12 were from a range of ethnic groups including three South East Asian and two Black African. Children were randomly assigned to one of three experimental conditions (criticism: person/process/control).

Materials and Procedure

The scenarios and procedure were the same as in Experiment 1. However, this time the first three scenarios described failures followed with objective performance feedback (e.g., "you only got 3 out of 10 correct") and after each scenario children received either person (e.g., "you're not so good at maths"), process (e.g., "you didn't work really hard at this") or no further feedback. The final two scenarios depicted successes (e.g., "you got 5 out of 5 correct") and following these children received no feedback. As in Experiment 1, following each scenario children were asked how much they liked their teacher and how much they perceived her to like them. These measures were answered on a five-point smiley face scale. After completing the measures, the children were thanked and debriefed.

Results and Discussion

We first tested for any effects of scenario number, gender and age. A repeated-measures ANOVA comparing the impact of feedback (person, process and control) across each of the three failures revealed no main effect of failure number on liking for the teacher.

However, the children perceived the teacher to like them slightly less following the third failure compared to the first $F(2,174) = 3.48$, $p = .033$. There was however, no interaction between success number and feedback type. Two (gender: male/female) x 3 (feedback: person/ process/ control) ANOVAs revealed no main effects for gender and no interactions between gender and feedback condition. Finally, 2 (age group: 7-8/9-10) x 3 (feedback type: person/process/) ANOVAs revealed main effects for age in that younger children both liked the teacher more $F(1, 84) = 10.30$, $p = .002$, and perceived that she liked them more $F(1, 84) = 11.39$, $p = .001$. However, there were no interactions between age and feedback type. We therefore calculated average scores across the three failures and collapsed data across gender and age.

We next tested the hypothesis that feedback type would influence responses following failure. For means, standard deviations and inferential statistics see Table 2. One-way ANOVAs (feedback: person/process/control) revealed main effects for criticism type on children's liking for the teacher and perceptions of how much their teacher liked them. Because children in the person condition were expected to show the most negative feelings about the student-teacher relationship we conducted a planned comparison analysis, comparing children in the person condition (-2) to those in both the process (1) and control (1) conditions. Differences were significant in terms of children's liking for the teacher $t(88) = 2.78$, $p = .007$, and teachers' liking for them $t(86) = 2.74$, $p = .008$. Thus, students who received person criticism showed more negative perceptions of the student-teacher relationship than those in the process and no feedback conditions.

We then examined responses following successes. We conducted a paired samples t-test comparing changes in the perceived student-teacher relationship from failure three to success one. Children's liking for the teacher increased $t(93) = -7.68$, $p < .01$ as did their

perceptions of teacher's liking for them $t(89) = -5.90$, $p < .01$. Therefore, success seemed to lead children to view the student-teacher relationship more positively.

As in Experiment 1, the two successes were considered separately. Testing for any effects of gender and age, 2 (gender: male/female) x 3 (feedback: person/process/control) ANOVAs showed no main effects of gender and no interactions between gender and feedback. Two (age group: 7-8/9-10) x 3 (feedback type: person/process/) ANOVAs revealed one main effect of age group following success 2 where younger children perceived their teacher to like them more $F(1,79) = 4.11$, $p= .046$. All other main effects and interactions between age and feedback were not significant and we therefore collapsed across age and gender.

To test the prediction that feedback type would influence responses to subsequent success, one-way ANOVAs revealed that the type of criticism the children had previously received had a significant impact on perceptions of the student-teacher relationship following the first success. Again, we conducted a planned comparison analysis, comparing children in the person condition (-2) to those in both the process (1) and control (1) conditions. Differences were significant for children's liking for the teacher $t(91) = 2.41$, $p = .018$ and perceptions of how much she liked them $t(90) = 2.07$, $p = .042$. There were no differences between those who received process or no feedback. This suggests that receiving person feedback led children to dislike the teacher more, and perceive that she disliked them more, than receiving process or no feedback. This effect occurred even though all children felt slightly more positive about the relationship following success. Following a second success there were no longer any main effects of criticism on perceptions of the student-teacher relationship.

Results therefore demonstrate that following failure, children who had received person feedback had the most negative perceptions of the student-teacher relationship. This

suggests that person feedback following failure is potentially more damaging to the student-teacher relationship than the other types of feedback. Following success, all children reported a more positive student-teacher relationship, again illustrating how important experiences of academic success can be to the student-teacher relationship. However, children who had received person feedback felt more negative about the student-teacher relationship even following the first success and perceptions of the relationship were only improved following a second success. Following the second success children who received person criticism seemed to "forgive" their teacher and view the relationship more positively. However, this effect was not statistically significant.

General Discussion

Previous research suggests that positive student-teacher relationships are associated with higher academic achievement (Pianta, 1999; Hamre & Pianta, 2001). The current research provides evidence that feedback may be an important factor in the development of such positive relationships, especially in the case where children fail at tasks and are criticised. In Experiment 1, praise did not influence children's responses following either success or failure. However, in Experiment 2 the type of criticism had a significant influence on children's feelings about the hypothetical student-teacher relationship. Following failure, children who had received person feedback had the most negative perceptions of the student-teacher relationship. There were no differences between those who received process or no feedback.

These results therefore suggest that, whilst the type of feedback following success may not make a difference to perceived student-teacher relations, teachers should perhaps be cautious about the type of feedback they deliver following failure. Person forms of criticism may be viewed by children as an attack on the relationship (Heyman & Legare, 2005). Our findings suggest that it be more productive to give process criticism or no direct criticism to

maintain a positive student-teacher relationship following failure. Further, results from Experiment 2 suggest that children remember feedback and continue to respond to it in future. Children who received person feedback on their failures maintained a more negative view of the hypothetical student-teacher relationship even following a first success. This suggests that teachers should be aware that the criticism they deliver may have a long-term impact on how children view the student-teacher relationship. In marital relationships, Gottman (1999) found that couples who experience five positive interactions for every negative interaction are more likely to maintain their positive relationship. In student-teacher relationships, teachers may be similarly advised to ensure they have positive interactions with all their students in order to offset negative interactions.

Further, our findings highlight the importance of experiences of success in helping children develop and maintain a positive relationship with their teacher. While performance is not entirely within teachers' control, they are able to set tasks that are more or less likely to lead to success. Our results suggest that merely setting children a task where they can succeed and giving them an objective score may enough to lead to positive perceptions of the student-teacher relationship without also requiring teacher praise. We are not suggesting that teachers should never set challenging tasks where children may fail for fear of damaging the student-teacher relationship. However, it may be that perhaps teachers should avoid highly challenging tasks early on in the year as failure may damage the developing student-teacher relationship more when children have less information on which to base their assessment of their relationship with the teacher. Teachers could also consider breaking challenging tasks into smaller tasks that students find easier to succeed in. This 'scaffolding' approach may therefore enhance student teacher relationships as well as student learning (Vygotksy, 1978).

Limitations and Future Directions

The current research used an experimental scenario methodology, which has some distinct advantages but also some limitations. Experimental scenarios allow researchers to simulate the experience of receiving feedback without actually criticising children. They also allow researchers to directly study the effects of feedback on educational factors in a controlled setting whilst eliminating the potential effects of extraneous factors such as the nature of existing student-teacher relationships. However, children may respond to feedback differently in a real classroom from a real teacher with whom a relationship has already been established. They may react in different ways to subtle changes in which the feedback is delivered (e.g., the teacher's facial expression and tone of voice). Subsequent research could therefore examine the influence of feedback using more realistic methodologies. We should also note that in the current experiments, the teacher was always female. Whilst this reflects the reality for most British schoolchildren, to avoid any possible influence of teacher gender it would be desirable to use gender-neutral pronouns to describe the teacher.

Future research could also examine the impact of feedback given during different stages of a student-teacher relationship. Feedback may be particularly important early in the year when children are developing new relationships with their teachers. At these early stages in the relationship children and teachers will not know each other well. It may be that creating early opportunities for success may lead children to feel more positive about their performance and the student-teacher relationship. Indeed this may have been the case in the current research as the children had no prior knowledge of the fictional teacher. In contrast, in an established relationship criticism may be viewed more positively as it may suggest that the teacher knows the student's ability level and has high expectations (Meyer, 1992). Therefore, an existing positive student-teacher relationship may be resilient enough to allow for criticism to be delivered and viewed as constructive. Future research could also examine

the impact of feedback across a longer time period. This could also take into account the teachers' usual style and frequency of feedback delivery.

Similarly, it would be beneficial to explore how feedback may influence existing "difficult" student-teacher relations. Interventions have been developed in which teachers and students spend time together regularly to develop more positive ways of interacting. However, these types of interventions are time intensive (Hamre & Pianta, 2005). The current research suggests that creating experiences of success and avoiding person criticism may help children – perhaps even those in conflict with their teachers – to feel more positive about the student-teacher relationship.

In addition, the current research only considered the role of the child and teacher. However, other social variables such as audience, comparison with peers, classroom climate and school climate could all influence how children respond to feedback and how they perceive their relationship with their teacher. Future research could include variables such as these to determine whether the patterns found in the current experiment still hold true when the wider context is considered (Pianta, 1999). Finally, although the current research follows on from a long tradition of research on the framing of feedback (e.g., Dweck, 1999; Kamins & Dweck, 1999; Mueller & Dweck, 1998), because the student-teacher relationship is an interactive, dynamic dyad where both student and teacher expectations are important, it would be beneficial to consider how other theoretical perspectives may inform researchers' investigations of this relationship and its effects. Specifically, expectancy-value theory (Eccles, Wigfield & Schiefele, 1998) posits that achievement related choices are based on an individual's expectations for success and the importance or value the individual attaches to the options they perceive as available. The current research suggests that teacher feedback can lead to more positive student-teacher relations, but feedback may also influence students' perceptions of likely success which may in turn encourage children to engage more with their

studies or remain in school longer. Likewise, future research could consider feedback as a form of conditioning which modifies behaviour (e.g., Skinner, 1938). The behaviour of children in response to this feedback is also likely to influence perceptions of their relationship with the teacher. Adopting multiple theoretical approaches will allow a greater understanding of the complexities and wider implications of student-teacher relationships.

Conclusions

The current research demonstrates that there may be unintended consequences of feedback in educational settings. While teachers may feel that feedback provides children with constructive feedback on their academic performance, children's interpretation of this feedback may lead to attributions that the teacher likes or dislikes them. Such inferences may in turn influence student-teacher relationships and potentially influence academic outcomes. Subsequent research could further disentangle these effects to determine how feedback can best be delivered to enhance both student learning and also the student-teacher relationship.

References

Abry, T., Rimm-Kaufman, S. E., Larsen, R. A., Brewer, A. J. (2013). The influence of

    fidelity of implementation on teacher-student interaction quality in the context of a

    randomized controlled trial of the Responsive Classroom approach. *Journal of School*

    Psychology, 51, 437-453. doi: 10.1016/j.jsp.2013.03.001

Baker, J. A. (1999). Teacher-student interaction in urban at-risk classrooms: Differential

    behavior, relationship quality, and student satisfaction with school. *Elementary School*

    Journal, 100, 57-70. doi: 10.1086/461943

Baron, J. (1988).   Utility, exchange, and commensurability. *Journal of Thought, 23,* 111-

    131.

Birch, S. H., & Ladd, G. W. (1998). Children's interpersonal behaviours and the teacher-

    child relationship. *Developmental Psychology, 34,* 934-946. doi: 10.1037//0012-

    1649.34.5.934

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early

    school adjustment. *Journal of School Psychology, 35,* 61-79. doi: S0022-

    4405(96)00029-5

Brophy, J. E. (1981). Teacher Praise: A Functional Analysis. *Review of Educational*

    Research, 51, 5-32. Doi: 10.3102/00346543051001005

Burnett, P. C. (2002). Teacher praise and feedback and students' perceptions of the classroom

    environment. *Educational Psychology, 22,* 5-16. doi: 10.1080/01443410120101215

Burnett, P. C. (2001). Elementary students' preferences for teacher praise. *Journal of*

    Classroom Interaction, *36,* 16-23. doi: 10.1037/0022-0663.69.4.419

Cooper, H. M. (1977). Controlling personal rewards: Professional teachers' differential use of

    feedback and the effects of feedback on the students' motivation to perform. *Journal of*

    Educational Psychology, 69, 419-427. doi: 10.1037/0022-0663.69.4.419

Department for Education (2013). Education and training statistics for the United Kingdom.

DePaulo, B. M., & Bell, K. L. (1996). Truth and investment: Lies are told to those who care. *Journal of Personality and Social Psychology, 71,* 703-716. doi: 10.1037//0022-3514.71.4.703

Dohrn, E. & Bryan, T. (1994). Attributional instruction. *Teaching Exceptional Children, 26,* 61-63.

Dweck, C.S. (1999). *Self-theories: Their role in motivation, personality and development.* Philadelphia: Psychology Press.

Entwhistle, D. R., Alexander, K. L. Pallas, A. M. & Cardigan, D. (1987).   The emergence of academic self-image of first graders: Its response to social structure. *Child Development, 58,* 1190-1206. doi: 10.2307/1130614

Gottman, J. (1999). *The Marriage Clinic: A Scientifically Based Marital Therapy*. New York, NY: W.W. Norton & Co.

Hamre, B. K., & Pianta, R. C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72,* 625-638. doi: 10.1111/1467-8624.00301

Hamre, B. K. & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development, 76,* 949-967. doi: 10.1111/j.1467-8624.2005.00889.x

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research, 77,* 81-112. doi: 10.3102/003465430298487

Heyman, G. D., Fu, G., Sweet, M. A., & Lee, K. (2009). Children's reasoning about evaluative feedback. *British Journal of Developmental Psychology, 27,* 875-890. doi: 10.1348/026151008X390870

Heyman, G. D., & Legare, C. H. (2005). Children's evaluation of sources of information

about traits. *Developmental Psychology, 41,* 636-647. doi: 10.1037/0012-1649.41.4.636

Howes, C., & Hamilton, C. E. (1992). Children's relationships with caregivers: Mothers and child care teachers. *Child Development, 63,* 859-866. doi: 10.2307/1131238

Hughes, J. N., Cavell, T. A., Jackson, T. (1999). Influence of teacher–student relationship on childhood aggression: A prospective study. *Journal of Clinical Child Psychology. 28,* 173-184. doi: 10.1207/s15374424jccp2802_5

Kagan, J., Reznick, J. S., Snidman, N., Gibbons, J., & Johnson, M. O. (1988). Childhood derivatives of inhibition and lack of inhibition to the unfamiliar. *Child Development, 59,* 1580-1589. doi: 10.2307/1130672

Kamins, M. L. & Dweck, C. S. (1999). Person vs. process praise and criticism: Implications for contingent self-worth and coping. *Developmental Psychology, 35,* 835-847. doi:10.1016/S1060-3743(01)00038-8

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: Ahistorical review, a meta-analysis and a preliminary feedback intervention theory. *Psychological Bulletin, 119,* 254-284. doi:10.1037/0033-2909.119.2.254

Lerner, J. V., Lerner, R. M., & Zabski, S. (1985). Temperament and elementary school children's actual and rated academic performance: A test of a "goodness-of-fit" model. *The Journal of Child Psychology and Psychiatry, 26,* 125-136. doi: 10.1111/j.1469-7610.1985.tb01633.x

Maldonado-Carreño, C., & Votruba-Drzal, E. (2011). Teacher-Child relationships and the development of academic and social skills during elementary school: A within and between child analysis. *Child Development, 82,* 601-616. doi: OI: 10.1111/j.1467-8624.2010.01533.x

Marsh, H. W. (1990). The influences of internal and external frames of reference on the

formation of English and math self-concepts. *Journal of Educational Psychology, 82,* 107-116. doi: 10.1037//0022-0663.82.1.107

Meyer, W. (1992). Paradoxical effects of praise and criticism on perceived ability. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology, 3,* 259-283.

Merrett, F. & Tang, W. (1994). The attitudes of British primary school pupils to praise, rewards, punishments and reprimands. *British Journal of Educational Psychology, 64,* 91-103. doi: 10.1111/j.2044-8279.1994.tb01087.x

Merrett, F. & Wheldall, K. (1992) Teachers' use of praise and reprimands to boys and girls. *Educational Review, 44,* 73-79. doi: 10.1080/0013191920440106

Mueller, C. M., & Dweck, C. S. (1998). Praise for intelligence can undermine children's motivation and performance. *Journal of Personality and Social Psychology, 75,* 33-52. doi: 10.1037//0022-3514.75.1.33

Nurmi, J. (2012). Students' characteristics and teacher–child relationships in instruction: A meta-analysis. *Educational Research Review, 7,* 177-197. doi: 10.1016/j.edurev.2012.03.001

Pianta, R. C. (1999). *Enhancing relationships between children and teachers.* Washington, DC: American Psychological Association.

Pianta, R. C., Nimetz, S. L. & Bennett, E. (1997). Mother-child relationships, teacher-child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly, 12*, 263-80. doi: 10.1016/S0885-2006(97)90003-X

Pianta, R. C., Steinberg, M. S., & Rollins, K. B. (1995). Teacher-child relationships and deflections in children's classroom adjustment. *Development and Psychopathology, 7*, 295-312. doi: 10.1111/j.1467-9507.2008.00508.x

Ridley, D. S., & Walther, B. (1995). *Creating responsible learners: The role of a positive classroom environment.* Washington DC, USA: American Psychological Association.

Rimm-Kaufman, S. E. Kagan, J. (2005). Infant predictors of kindergarten behavior: The contribution of inhibited and uninhibited temperament types. *Behavioral Disorders, 30,* 329-345.

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L. & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research, 81,* 493–529. doi: 10.3102/0034654311421793

Skinner, B. F. (1938). *The Behavior of Organisms: An Experimental Analysis*. New York: Appleton-Century.

Skipper, Y., & Douglas, K.M. (2012). Is no praise good praise? Effects of positive feedback on children's responses to subsequent failures. *British Journal of Educational Psychology, 82,* 327-399. doi: 10.1111/j.2044-8279.2011.02028.x

Skipper, Y., & Leman, P. J. (Under Review). Young people's understanding of the role of feedback on academic choices.

Stipek, D., & MacIver, D. (1989). Developmental change in children's assessment of intellectual competence. *Child Development, 60,* 521-538. doi: 10.2307/1130719

Twenge, J. M. (2006). *Generation Me: Why today's young Americans are more confident, assertive, entitled—and more miserable than ever before.* New York: Free Press.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes.* Cambridge, MA: Harvard University Press.

Wigboldus, D., & Douglas, K. (2007). Language, stereotypes, and intergroup relations. In Fiedler, K. (Ed.), *Social Communication* (pp79-106). New York: Psychology Press.

Wigboldus D. H. J, Semin G. R., & Spears R. (2006). Communicating expectancies about others. *European Journal of Social Psychology, 36,* 815-824. doi: 10.1002/ejsp.323

Worrall, C., Worrall, N., & Meldrum C. (1983). The consequences of teacher praise and

criticism. *Educational Psychology, 3,* 127-136. doi: 10.1080/0144341830030204

Wubbels, T., & Levy, J. (1993). *Do you know what you look like? Interpersonal*

Relationships in Education. London: The Falmer Press.

Table 1

Effects of Praise on Children's Responses to Success and Failure (Study 1)

	Person		Process		Control		ANOVA
Average success	*M*	*SD*	*M*	*SD*	*M*	*SD*	
Liking for teacher	3.82	.89	3.86	.99	3.71	1.00	*F*(2, 144)=.295, *p*=.745
Teachers' liking for them	3.75	.93	3.78	.84	3.71	1.00	*F* (2, 144)=.581, *p*=.561
Failure 1							
Liking for teacher	2.75	1.37	3.27	1.40	3.00	1.36	*F*(2,142)=1.637, *p*=.198
Teachers' liking for them	2.89	1.20	3.45	1.26	2.98	1.48	*F*(2,142)=2.47, *p*=.088
Failure 2							
Liking for teacher	2.89	1.17	3.27	1.35	3.10	1.42	F(2,143)=.95, *p*=.388
Teachers' liking for them	3.13	1.04	3.19	1.27	3.00	1.37	*F*(2,142)=.298, *p*=.743

Table 2

Effects of Criticism on Children's Responses to Failure and Success (Study 2)

	Person		Process		Control		
Average Failure	*M*	*SD*	*M*	*SD*	*M*	*SD*	
Liking for teacher*	2.17	.95	2.81	1.13	2.95	1.21	$F(2,90)=4.00$, $p=.022$, $\eta^2 = .083$,
Teachers' liking for them*	2.79	1.04	3.61	.90	3.31	1.19	$F(2,88)=4.43$, $p= .015$, $\eta^2 = .093$
Success 1							
Liking for teacher *	3.19	1.44	4.06	1.08	3.72	1.32	$F(2,93)=3.56$, $p=.032$, $\eta^2 = .073$
Teachers' liking for them	3.27	1.45	4.06	.91	3.66	1.33	$F(2,92)=3.09$, $p=.050$, $\eta^2 = .064$
Success 2							
Liking for teacher	3.32	1.52	4.24	.95	3.59	1.29	$F(2,93)=1.84$, $p=.165$
Teachers' liking for them	3.74	1.10	4.15	.78	3.65	1.38	$F(2,92)=1.84$, $p=.165$

* $p < .05$