Teachers' conceptions of feedback: Growth-orientation in a national sample of New Zealand teachers.

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Abstract

A key step in assessment is responding (i.e., feedback) to interpretations of learner performance. Effective feedback focuses on task, processes, and self-regulation, rather than the self; in other words, it is on a growth pathway rather than a well-being one. Assessment *for* Learning also argues that feedback should be learning rather than grading-oriented. Teachers' beliefs about the nature and purpose of feedback may explain how feedback is implemented. A 71 item *Teachers' Conceptions of Feedback* inventory was trialled on a nation-wide sample of New Zealand primary and secondary school teachers (*N*=518). Participants indicated their degree of agreement for each item using a 6-point, positively-packed rating scale. Exploratory factor analysis (MLE, oblimin rotation) retained 48 items in 10 factors. These were tested with CFA in an inter-correlated model, with acceptable fit. Teachers endorsed most highly learning-oriented feedback and rejected grading-oriented factors. These data suggest that that New Zealand teachers' espoused conceptions of feedback lay predominantly on a growth pathway, rather than a well-being pathway.

Introduction

Assessment *for* Learning prioritizes the use of assessment as a means of both teachers and students discovering what they need to do next in order to increase and improve their learning (e.g. Brookhart, 2004; Harlen, 2007; Weeden, Winter, & Broadfoot, 2002). Indeed, Assessment *for* Learning is seen by many as predominantly about engaging, motivating, and enabling students to improve their own learning (Black & Wiliam, 1998; Brookhart, 1997, 2009) and may be viewed as an incipient theory of pedagogy rather than a model of assessment *per se* (Black & Wiliam, 2006). The role of the learner is considered important in the process of Assessment *for* Learning, in particular the learner's involvement in *responding* to feedback in order to close the gap between current and desired performance (Black, Wiliam, Lee, Marshall, & Harrison, 2003; Hattie & Timperley, 2007; Sadler 1989; Shepard, 2006; Tunstall & Gipps, 1996).

From an Assessment *for* Learning definition of formative assessment, some consensus has arisen as to strategies that make tangible the formative effects. Leahy, Lyon, Thompson, and Wiliam (2005) identified "feedback that moves learners forward" as one of "five broad strategies to be equally powerful for teachers of all content areas and at all grade levels" (p. 20). Nonetheless, appreciating how teachers conceive of feedback is an important step in determining what is actually happening in classroom practice.

To date, there has been little research examining teacher conceptions of or motives for feedback, with most work examining their enacted practices. This paper will examine existing research on types of feedback and their purposes before reviewing the limited research on teacher understandings of and uses for feedback. Next, it will present data from a survey study of New Zealand teachers' conceptions of feedback. This study examined the broad reasons teachers gave for their uses of feedback, identifying the purposes they identified as underpinning their practices.

Defining Feedback

Feedback is considered by many experts to be the most important element of Assessment *for* Learning (Black, Wiliam, Lee, Marshall, & Harrison, 2003; Clarke, 2003; Hattie, 2009; Sadler 1989; Shepard, 2006). Nevertheless, feedback has been found to be the element of formative assessment "most laden with a legacy of bad practice and misguided views" (Clarke, 2003, p. 3). This paper draws on Hattie and Timperley's (2007) definition of feedback:

> ….feedback is conceptualized as information provided by an agent (e.g., teacher, peer, book, parent, self, experience) regarding aspects of one's performance or understanding. (p. 81)

Hence, within this paper, it is acknowledged that feedback legitimately comes from a range of sources, not just the teacher. However, the validity and effectiveness of feedback from peers and the self is dependent on inter-personal relationships and psychological issues related to self-disclosure and trust (Cowie, 2009; Peterson & Irving, 2008; van Gennip, Segers, & Tillema, 2010). Research has indicated that some students and teachers question the validity and reliability of the feedback received through these practice (e.g., Harris, Harnett, and Brown, 2009; Harris and Brown, 2010), indicating that more work is needed to discern ways to build stakeholder confidence in the feedback generated through these practices. It should go without saying that the true educational purpose of feedback is to improve student academic performance or in a self-regulation model, maximise student progress on a growth pathway (Boekaerts & Corno, 2005).

Theoretically and empirically based models suggest that there are a range of types of feedback with differing purposes or outcomes (e.g., Askew & Lodge, 2000; Butler & Winne, 1995; Hargreaves, 2005; Hattie & Timperley, 2007; Shute, 2008; Tunstall & Gipps, 1996). For example, Tunstall and Gipps' (1996) work in the United Kingdom found that teachers

gave four types of feedback which aggregated into three overall orientations: performance-goal orientation included socialisation and management and rewarding and punishing, mastery-goal orientation was expressed through specifying attainment and improvement, and learning-oriented was achieved through constructing achievement and the way forward.

Hattie and Timperley's (2007) review of feedback literature identified four types of feedback, along with factors mediating their effectiveness. These types were feedback task (FT, e.g., whether work was correct or incorrect), feedback process (FP, e.g., comments about the processes or strategies underpinning the task), feedback self-regulation (FR, e.g., reminders to students about strategies they can use to improve their own work), and feedback self (FS, e.g., non-specific praise and comments about effort). Hattie and Timperley (2007) identified that the influence of feedback can be either positive or negative depending on both its type and the way that it is given; personal (or "self") feedback, usually involving praise, is rarely effective as it seldom contains information on how to improve. They found that feedback about self-regulation leads to greater engagement, effort, and enhanced self-efficacy, making it the most powerful type (Butler & Winne, 1995). However, they reported that task feedback was most common, a finding supported by many studies (e.g., Black & Wiliam, 1998; Harnett, 2007; Hattie & Timperley, 2007; Sadler, 1989; Tunstall & Gipps, 1996) which have also concluded that teachers predominantly provide feedback in the form of "low-level" praise or criticism.

In addition to the type of feedback, its timing was also noted as important variable (Hattie & Timperley, 2007). While traditionally feedback has been provided after an assessment event, Assessment *for* Learning advocates suggest that formative feedback plays a key role in improving learning. In order for feedback to be formative, it should be provided to learners *during*, not after, the learning process. Cowie and Bell (1999) described such a process as "interactive formative assessment" where teachers notice, recognize, and respond to student thinking in an unplanned and spontaneous manner, during teacher-student interactions. Hattie and Timperley (2007) noted that most studies relating to the timing of feedback do not take into account the type of feedback provided. They suggested that the optimal timing in relation to the delivery of feedback may vary based on the content of the feedback; while simple error correction may be most effective if provided immediately, for feedback relating to processes (e.g., reading fluency) or complex tasks, delaying the feedback may be a preferred strategy as it would allow students time to process the suggestions without interrupting the task in progress.

While there is a growing body of literature examining student understandings of feedback (e.g., Lipnevich, Smith, & Barnhart, 2008; Peterson & Irving, 2008; Poulos & Mahony, 2008), few studies have examined teacher conceptions of feedback (Harris, Irving, & Peterson, 2008). Harris, Irving, and Peterson (2008) found the New Zealand teachers in their study described three types of feedback: spoken or written comments about learning, grades or marks, and spoken or written comments about behaviour or effort. Teachers identified four main purposes for these three types of feedback. These were: improving student learning (e.g., providing information about weaknesses in student work and how to correct them), reporting and compliance purposes (e.g., giving grades, providing hints to students about what their final grades might be to prevent surprise when marks were received), and encouraging students (e.g., praise, feedback about effort). Additionally, they articulated that some feedback served no purpose whatsoever as it was not acted upon by students; this feedback was deemed irrelevant and most commonly associated with feedback given along with a final grade.

Given the limited amount of research examining teacher understandings and conceptions of feedback, a large-scale study was undertaken to examine New Zealand teachers' conceptions of feedback using a questionnaire method. New Zealand was chosen as

it, as a nation, has adopted an Assessment *for* Learning approach where feedback is embedded as part of good practice. This context is described more in the following section.

Understanding the New Zealand Context of this Study

In the last two and a half decades, large structural changes have been initiated in New Zealand schooling and education (Fiske & Ladd, 2000; Levin, 2001). The national assessment policy in the primary school sector emphasizes voluntary, school-based assessment for the purposes of raising achievement and improving the quality of teaching programs (New Zealand Ministry of Education, 1994) relative to the outcomes and objectives specified in the national curriculum. The curriculum is child centred, non-prescriptive, holistic, and integrated while, simultaneously, having managerial overtones with specified outcomes and objectives across multiple levels. At the time of this study, there was no compulsory, state mandated assessment regime in the primary school sector; hence, all assessment practices were voluntary and low stakes.

It is unclear what effect the introduction of the "National Standards" initiative (New Zealand Ministry of Education, 2010) will have on the New Zealand assessment environment. National Standards came into effect in schools with pupils in Years 1 to 8 in 2010. The standards set clear expectations that all students will be compared with in reading, writing, and mathematics in the first eight years at school. All schools are required to provide at least two written reports to parents about their child's progress and achievement in relation to the standards, to report on strengths and identify areas for improvement, and to set targets for student achievement. While this change will make teachers adhere more closely to national standards and comply with mandatory guidelines about reporting to parents, it does not have a standardized assessment component. Hence, how teachers measure student achievement against these standards is still flexible, although many schools are likely to select Ministry of Education created standardized measures out of convenience.

Currently, primary school teachers make extensive use of informal assessments and standardised tests (Crooks, 2002), primarily for the purpose of improving instruction and student learning (Croft, Strafford, & Mapa, 2000; Hill, 2000). In contrast to primary school, at secondary school assessment is often focused on preparing for or implementing the high-stakes, student qualifications system (i.e., the National Certificate of Educational Achievement) which begins formally in the third year of secondary schooling when students are about age 15. Hence, it should be expected that teachers in New Zealand are strongly committed to the notion of assessment for improved learning and teaching, while not avoiding the use of assessment to evaluate school quality and to grade student learning for certification processes.

Methodology

This study's design was a non-experimental survey of a nationally representative sample of New Zealand practicing teachers which tested the validity of a theoretically devised set of constructs concerning teachers' conceptions of feedback.

Instrument

As there was no existing instrument designed to measure teacher conceptions of feedback quantitatively, a questionnaire was devised, drawing primarily on work by Hattie and Timperley (2007) and Harris, Irving, and Peterson (2008). Items related to ten feedback constructs were drafted. The first four factors related to Harris, Irving, and Peterson's four purposes of feedback (i.e., irrelevance, improvement, reporting and compliance, and encouragement). The next four factors were related to Hattie and Timperley's (2007) four feedback types (i.e., feedback task, feedback process, feedback self-regulation, and feedback self). The final two factors were related to questions arising from the feedback literature. Factor Nine related to the validity of self and peer feedback, while Factor 10 related to the

timing ideal for the delivery of feedback. These ten factors are listed below with a sample item provided for each:

- Factor 1-Purpose Irrelevance: Feedback is pointless because students ignore my comments and directions.
- Factor 2- Purpose Improvement: Students use the feedback I give them to improve their work.
- Factor 3- Purpose Reporting and Compliance: I give feedback because my students and parents expect it.
- Factor 4- Purpose Encouragement: The point of feedback is to make students feel good about themselves.
- Factor 5- Feedback task: My feedback tells students whether they have gotten the right answer or not.
- Factor 6- Feedback process: My feedback focuses on the procedures underpinning tasks rather than whether the work is correct or incorrect.
- Factor 7- Feedback self-regulation: Good feedback reminds students that they already know how to check their own work.
- Factor 8- Feedback self: Good feedback pays attention to student effort over accuracy.
- Factor 9- Peer/self feedback reliability/validity: Students are able to provide accurate and useful feedback to each other and themselves.
- Factor 10- Timeliness of feedback: Delaying feedback helps students learn to fix things for themselves.

While these were designed as 'independent' factors, it was assumed that there would be some inter-correlation between them as some seemed highly related conceptually (e.g., Factor 4-Purpose encouragement and Factor 8- Feedback self).

The original questionnaire (Harris & Brown, 2008) was trialled (focus groups followed by a survey) by O'Quin (2009) using responses from 308 middle school teachers in Louisiana schools in the United States. Responses from O'Quin's teachers suggested that at least seven factors could be identified. This provided some confidence that the instrument was likely to identify the conceptions of New Zealand teachers.

Respondents used a six-point, positively-packed, agreement rating scale known to generate discrimination in contexts of social desirability (Brown, 2004). Responses were coded: strongly disagree=1, mostly disagree=2, slightly agree=3, moderately agree=4, mostly agree=5, and strongly agree=6.

Procedures

Survey forms were sent out to New Zealand primary and secondary schools which had been selected according to a stratified representative frame using size, region, and socio-economic strata. When forms were returned blank, they were sent out again to a school with a similar stratification.

Participants

In total, 1492 teacher surveys were delivered to 457 schools. Valid responses were received from 518 teachers, constituting a return rate of 35% of teachers. Out of 518 valid responses, 72% were female (n=374) and 82% were of New Zealand European ethnicity (n=422). These proportions are consistent with the 2004 Teacher Census[1] which had 80% of respondents as European/Pakeha and 82% of primary and 58% of secondary teachers were female. Just over ¾ had taught for six or more years with 56% having taught more than 10 years. Approximately half (52%) gave their level of responsibility as teacher with no

[1] http://www.educationcounts.govt.nz/publications/schooling/teacher_census

additional responsibilities (e.g., department head, dean, director, manager, or subject specialist).

Analysis

A combination of exploratory and confirmatory factor analyses was used to evaluate the TCoF inventory responses. All cases with >7 missing values were dropped from analysis and missing values in the balance of data (average 1.5% missing per item) were imputed using the expectation maximization procedure (Dempster, Laird, & Rubin, 1977). Little's MCAR test had χ^2/df =1.04 (p=.31), so it was concluded this did not disturb starting values for item means, standard deviations, and covariances. In this study, a model was developed with exploratory factor analysis (maximum likelihood estimation with oblique rotation) and tested with a restrictive analysis on the data from which the exploratory result was developed. Items were rejected from factor analysis when their loadings were <.30 on a logically appropriate factor or if they had cross-loadings >.30 on other factors. Procedurally, given the large number of items being evaluated (k=71), when items were identified as strongly loading on a unique and interpretable factor, they were set aside from further exploratory analysis.

Maximum likelihood confirmatory factor analysis of the variance-covariance Pearson correlation matrices, using AMOS software (Arbuckle, 2008), was used throughout to test the validity of the model. In line with suggested practice (Cheung & Rensvold, 2002; Fan & Sivo, 2007; Marsh, Hau, & Wen, 2004; Vandenberg & Lance, 2000), models with statistically non-significant χ^2 per df, GAMMA hat >.90, and root mean square errors of approximation (RMSEA) and standardized root mean residuals (SRMR) <.08 were considered sufficiently close to the data so as to not be rejected. When a model is poorly fitting, fit can be improved by simplifying the model by correlating 1st-order factors, joining highly-correlated 1st-order factors into single factors, or by inspection of modification indices. The key requirement is that any model changes are theoretically defensible and, ideally, cross-validated on an independent sample from the same population (MacCallum, 1995; Maruyama, 1998).

Results

In a first exploratory factor analysis (EFA), allowing all factors with eigenvalues>1.0, 20 factors were reported; this was rejected as implausible. The next EFA was restricted to 10 factors which led to the identification of six meaningful factors. A subsequent EFA of the remaining items led to the identification of four additional factors. These ten factors were tested in restrictive mode as inter-correlated factors. Inspection of modification indices led to removal of items which were not uniquely loading on their logical factor. Consequently, a ten inter-correlated factor measurement model, based on 48 items, of teacher conceptions of feedback was found that had acceptable fit (k=48; χ^2=2444.97; df=1035; χ^2/df=2.36, p=.12; gamma hat =.90; RMSEA=.051 [90%CI=.049-.054, p that RMSEA<.05=.20]; SRMR=.061).

Ten factors were extracted (items provided in Appendix A). These factors, their abbreviations provided in parentheses, were:

I. Feedback is student led (Student led)
II. Feedback focuses on student well-being (Student well-being)
III. Feedback focuses on growth in student learning (Growth in student learning
IV. Students only want grades (Students want grades)
V. Feedback should be timely (Timeliness important)
VI. Feedback evaluates student work (Evaluation)
VII. Feedback should be interactive (Interactive)
VIII. Teachers are the best source of feedback (Teacher feedback best)
IX. Feedback requires student response (Student response required)
X. Feedback is expected by the community (Community expectations).

While these ten factors did not match identically with the ten originally intended factors, they were quite similar in the main. Factors IV (Students want grades) and V (Timeliness important) related to the originally intended factors (i.e. original Factor 1, Irrelevance, and original Factor 10, Feedback should be timely).

While other factors did include blending of original factors, this was not entirely unexpected. For example, Factor II (Student well-being) was a blend of original Factor 4 (Purpose encouragement) and Factor 8 (Feedback self); this shows teachers did not distinguish between statements relating to types of feedback versus their purposes. Likewise, while Factor I (Student led) primarily drew items from original Factor 9 (Peer/self feedback validity/reliability), it also included items from other factors which specifically mentioned students or their peers being involved in creating or using feedback.

Factor III (Growth in student learning) combined items from original Factor 2 (Purpose improvement) and original Factors 6, 7, and 8 (Feedback Task, Process, and Self-regulation). This suggests that teachers may not make conscious distinctions between these three types of learning feedback, seeing them all as about improving student learning. This blending of items from original Factors 6, 7, and 8 was also found in Factor VII (Interactive) where teachers isolated out items relating to an interactive delivery of feedback and Factor IX (Student response required) where they responded to items which explicitly contained student actions in response to the feedback.

Two of the original factors also split. The original Factor 9 (Peer/self feedback reliability/validity) had included polarised items, some suggesting peer or self feedback was superior and others suggesting teacher feedback was more accurate. Those suggesting teacher feedback was the preferred source separated from the balance of items (which went to Factor I) to become Factor VIII (Teacher feedback best). Likewise, the original Factor 3 (Purpose reporting and compliance) split into two with items relating to feedback as grading going to Factor VI (Evaluation) and those relating to community expectations about feedback becoming Factor X (Community expectations).

While the factors did not come out exactly as designed, they do tap into three significant tensions around feedback practices (i.e., well-being, grading, and student participation). For example, Factors II and III identify the tension between growth and well-being, Factors IV and VI focus on the problem of providing grades, while Factors I, VII, and VIII address the issue of ownership—teacher, student, or some inter-active process.

The inter-correlations between these 10 factors (Table 1) showed interesting patterns. As might be expected by the analytic process, most factors had weak (i.e., <.30) inter-correlations suggesting that these various conceptions were relatively independent to each other. Values less than r=.13 were not statistically significant given n=518 at alpha=.01. Nonetheless, six factors had inter-correlations >.40, with four of these related to Factor III, Feedback leads to growth in student learning (r=.49 with Student led, r=.40 Timeliness important, r=.54 Interactive, and r=.57 Student response required) and the remaining two were related to the Interactive factor (r=.60 Student led, and r=.45 Timeliness important). Together these moderate correlations suggested, among this sample of teachers, a synergy in their thinking—feedback emphasises learning growth by being student-led but simultaneously interactive, timely, and focused on students responding to feedback. At the same time, the five statistically significant inverse correlations were also logically consistent. Factor IV, Students want grades, was weakly but negatively correlated with four factors (r=-.32 Student led, r=-.32 Growth in student learning, r=-.14 Timeliness, and r=-.25 Interactive), while Factor VII, Interactive, was also negatively correlated with Factor VI, Evaluation (r=-.24).

Taken together it would appear that there may be a learning-oriented and a grading-oriented conception of feedback which are in weak opposition to each other. Note that a

model having 10 factors under two correlated global 2nd-order factors (i.e., learning-oriented and grading-oriented) had statistically significant worse fit (i.e., $\Delta\chi^2$ with Δdf had z=15.10, p<.001 [Wilson & Hilferty, 1931]) and fit values (i.e., gamma hat =.88) suggested rejection of the model was plausible. Hence, we concluded that the ten inter-correlated factor solution is the most defensible analytic model.

[Insert table 1 about here]

Table 2 displays the mean scores for the 10 factors. Teachers endorsed between moderately and mostly three factors related to learning-oriented feedback (i.e., Growth in student learning *M*=4.90, Student response required *M*=4.45, and Interactive *M*=4.18). In contrast, teachers rejected the grading-oriented conception of feedback (i.e., Students want grades *M*=2.45, Community expectations *M*=2.88, and Evaluation *M*=3.06). The remaining factors (i.e., Timeliness important, Student led, Student well-being, and Teacher feedback best) were weakly but positively endorsed (i.e., mean scores between 3.40 and 3.87). The pattern of mean scores showed some support for the learning-oriented vs. grading-oriented distinction, but this is blurred by similar levels of agreement to student and teacher-led feedback.

[Insert table 2 about here]

Discussion

These data suggested that that New Zealand teachers' generally endorsed conceptions of feedback predominantly around growth of learning, rather than either as a well-being-orientation or as a grading construction. Feedback around evaluating with grades was clearly rejected in favour of focus on improving student learning—this suggests a normative adoption of a formulation of Assessment *for* Learning that rejects grades, scores, marks, and emphasis on evaluation of student work. At the same time, teachers preferred interactive rather than solely student or teacher-defined feedback, suggesting that the teachers viewed feedback as a mutual rather than as their sole responsibility. Further, they expected students to act on their rich descriptive commentary about task, process, or self-regulatory aspects of learning. Teachers' expect a response or action from students, otherwise they would probably not invest so much energy beyond a grade; failure to use the teacher's feedback defeats the purpose of avoiding evaluative grading.

Whether students are able to make use of such a style of feedback to actually improve their learning is an open question. There is strong evidence from New Zealand students that they seek and wish to have test-based assessment (Brown, Irving, Peterson, & Hirschfeld, 2009) and feedback from teachers with grades (Peterson & Irving, 2008). However, the low mean score for Factor VIII (Teacher feedback best), indicated that most teachers endorse the Assessment *for* Learning notion of student-led feedback. Nonetheless, the very large variance in this factor (*SD*=1.08) indicated that a sizeable minority of teachers actually supported the importance of teachers as source of feedback. Whether those teachers are in certain subjects (e.g., mathematics) or levels of schooling (e.g., secondary) remains to be investigated.

Much more importantly, the teachers have clearly indicated a preference for growth over student well-being in their conceptions of feedback; the difference in mean scores is about *d*=2.00, a very large discrepancy. This suggests that New Zealand teachers have adopted the notion of feedback for improved *learning* as the dominant purpose for feedback. Insofar as feedback is concerned, New Zealand teachers have eschewed as a norm the use of feedback for enhancing students' well-being (i.e., praise for effort or increased self-esteem). This is somewhat surprising, as there is strong evidence that New Zealand primary school teachers' concern for student well-being often leads them to deny students access to information as to how they were actually doing (Hattie & Peddie, 2003; 'Otunuku & Brown, 2007). Indeed, the pressure for national testing in New Zealand is often attributed to parental requests for more evaluative information about growth which parents assume will be

generated by such assessments (Gilmore, 1998). New Zealand teachers in this sample rejected external community pressure as their rationale for providing growth-oriented feedback, presumably because such action is a matter of professional practice to which the community of educators is committed. Hence, there are multiple reasons to anticipate that New Zealand teachers would respond positively to initiatives that supported their giving to students and families the rich, growth-oriented feedback they believe in (e.g., more time to meet with families or assessments that informed feedback).

Nonetheless, these results represent *espoused* theories that the participants use to explain their actions to themselves and to external audiences (Argyris & Schon, 1974) rather than their actual practices. Previous studies (Eraut, 1994, 2000; Hammerness, Darling-Hammond & Bransford, 2005; Harnett, 2007; Turner-Bisset, 1999; Yero, 2002) have concluded that there is frequently a discrepancy between what teachers *believe* or claim they are doing and what they are *actually* doing. This happens partly because espoused theories are developed, taught, and assessed in formal educational contexts, while *theories-in-use* develop separately and informally as teachers learn to cope with the pressures and demands of teaching practice (Eraut, 2000). In addition, teachers tend to assimilate new ideas and information without developing deep understanding, and consequently their pre-existing, implicit ideas and practices may be unchanged despite adoption of new espoused beliefs (Hammerness, Darling-Hammond, & Bransford, 2005; Harnett, 2007; Yero, 2002). Consequently, although the teachers in the present study *professed* a preference for interactive feedback and promoting student growth, these results may not accurately reflect *actual* teacher feedback practices. Further investigations will be required to investigate whether reporting practices have changed in line with these professed beliefs about feedback.

While factors obtained in this study were not identical to the planned factors, they were quite similar. When evaluating the original factors relating to Hattie and Timperley's four types of feedback (i.e. Feedback Task, Process, Self-regulation, and Self), it can be concluded that the distinctions made between process, task, and self-regulation feedback is much stronger in theory than in the conceptions of practicing teachers. Nonetheless, the teachers clearly distinguished between growth and well-being feedback types. While teachers clearly identified the irrelevance, improvement and encouragement purposes identified by Harris, Irving, and Peterson (2008), their ideas about reporting and compliance were even more fine grained than expected as they divided items relating to grading and evaluating student work from those identifying stakeholder expectations around the provision of feedback.

The results of this survey are entirely consistent with the official New Zealand government policy concerning the use and practice of assessment. The curriculum requires teachers to interactively use assessment to adjust teaching, engage students in self-regulating their own learning, and provide richly formative feedback that informs next steps in teaching and learning. The results here reflect this emphasis. What is also reassuring is that the teachers endorsed growth-oriented conceptions of feedback, rather than well-being or purely grading constructions of feedback. This priority in construing feedback has been shown to be associated with greater learning outcomes and greater self-regulation among learners; clearly, an intended goal of an Assessment *for* Learning framework. Notwithstanding any discrepancy there might be between teachers' espoused views and their actual practices, it would appear that the rhetoric and logic of Assessment *for* Learning is well-established in the conceptions of practicing teachers in New Zealand. The degree to which this model would be replicated in jurisdictions with quite different policy and practice priorities remains to be seen. However, it would appear the TCOF inventory is capable of identifying a wide range of beliefs teachers have about the nature of feedback and continued use of the inventory appears warranted.

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Table 1. Teacher Conceptions of Feedback Factor Inter-correlations

Factors	Factor Inter-correlations									
	I	II	III	IV	V	VI	VII	VIII	IX	X
I Student led	—	.20	**.49**	-.32	.38	-.12^{ns}	.60	-.07^{ns}	.39	-.02^{ns}
II Student well-being		—	.18	.08 ^{ns}	.16	.25	.16	.10^{ns}	.21	.22
III Growth in student learning			—	-.32	**.40**	.03^{ns}	**.54**	.12^{ns}	**.57**	.07^{ns}
IV Students want grades				—	-.14	.34	-.25	.17	-.10	.13
V Timeliness important					—	-.06^{ns}	**.45**	.01^{ns}	.27	-.08^{ns}
VI Evaluation						—	-.24	.21	.14	.25
VII Interactive							—	-.02^{ns}	.37	-.05^{ns}
VIII Teacher feedback best								—	.16	.05^{ns}
IX Student response required									—	.04^{ns}
X Community expectations										—

Note. Values >.40 highlighted in bold, *ns*=not statistically significant at alpha=.01.

Table 2. Factor Descriptive Statistics

Factor	*M*	*se*	*SD*
III Growth in student learning	4.90	.03	.60
IX Student response required	4.45	.04	.86
VII Interactive	4.18	.03	.80
V Timeliness important	3.87	.04	1.00
I Student led	3.72	.03	.79
II Student well-being	3.43	.04	.82
VIII Teacher feedback best	3.40	.05	1.08
VI Evaluation	3.06	.04	.84
X Community expectations	2.88	.05	1.23
IV Students want grades	2.45	.03	.79

Note. Mostly agree=5.00, moderately agree=4.00, slightly agree=3.00, mostly disagree=2.00.

Appendix A. Teachers' Conceptions of Feedback Items

Factors & Items	Loading
I Feedback is student led (Student led)	
70. I structure my class so that students give feedback to each other	0.76
68. I organise time in class for students to revise, evaluate, and give themselves feedback about their own individual work	0.72
57. My students generate ideas about improving their learning independent of me	0.66
40. Students are able to provide accurate and useful feedback to each other and themselves	0.64
50. Students can be critical of their own work and can find their own mistakes	0.55
69. My students analyse their own work with little direction from me	0.52
59. Peers are the best source of feedback	0.41
II Feedback focuses on student well-being (Student well-being)	
49. Feedback should be full of encouraging and positive comments	0.69
45. Good feedback praises students	0.65
58. Teachers should always include praise in their feedback about student work	0.59
24. The point of feedback is to make students feel good about themselves	0.58
35. The goal in giving feedback is to protect and enhance the student's self-esteem	0.58
66. My feedback includes comments on the effort students put into their work	0.55
31. Good feedback pays attention to student effort over accuracy	0.42
III Feedback focuses on growth in student learning (Growth in student learning)	
12. I can see progress in student work after I give feedback to students	0.66
2. Students use the feedback I give them to improve their work	0.59
55. My feedback helps students decide what to include and/or exclude in their work	0.57
17. Feedback is about helping students evaluate their own work	0.56
16. My feedback focuses on the procedures underpinning tasks rather than whether the work is correct or incorrect	0.53
6. Feedback lets students know what processes they should use in order to improve	0.53
22. Giving feedback is worthwhile because it helps students learn	0.51
53. Giving students feedback is important because it helps them learn	0.49
43. I aim to raise student performance with my detailed comments	0.46
IV Students only want grades (Students want grades)	
11. Students only pay attention to the grades or scores I give them	0.64
61. Students prefer grades or marks on their work instead of written comments	0.61
21. Feedback is pointless because students ignore my comments and directions	0.53
32. Students rarely make changes in their work in response to my feedback	0.53
V Feedback should be Timely (Timeliness important)	
29. Students should not have to wait for feedback	0.67
41. I give students feedback immediately after they finish	0.62
10. I aim to deliver feedback to students within two days of receiving their work	0.57
20. Feedback that takes more than a week to get to the student is useless	0.54
VI Feedback evaluates student work (Evaluation)	
23. Students need my feedback to know what grade they might get	0.63
5. My feedback tells students whether they have gotten the right answer or not	0.50
44. At my school, feedback has to include grades or marks	0.43

Factors & Items	Loading
25. I tell my students whether their work is good or bad	0.41
63. I always correct the errors I find in student work.	0.35
VII Feedback should be interactive (Interactive)	
26. Feedback helps students construct their own ideas about how to improve	0.63
67. Quality feedback happens interactively and immediately in the classroom while students are learning	0.55
64. Feedback is a two-way process between my students and me	0.55
65. My role in feedback situations is that of the listener	0.46
8. I avoid putting grades on student work as part of feedback	0.43
VIII Teachers are the best source of feedback(Teacher feedback best)	
30. Teacher feedback is far more accurate than feedback from a student's peers	0.69
9. Teachers are the most reliable source of feedback	0.61
IX Feedback requires student response (Student response required)	
37. My feedback reminds students of error correction strategies so they can fix their own mistakes	0.80
38. My feedback reminds each student to self-assess his or her own work	0.79
36. My feedback is specific and tells students what to change in their work	0.52
X Feedback is expected by the community (Community expectations)	
3. I give feedback because my students and parents expect it	0.70
54. I give feedback to students because my school expects me to	0.57

Note. Item numbers refer to order presented in original inventory; loading values are standardized beta regression weights.