

Maintaining good working experiences in the context of NCEA changes: Enablers and influences

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Based on findings from The National Survey of Schools project, this study aimed to examine the interactions between schools' professional learning and development cultures, teachers' general attitudes towards NCEA changes, their equity-related attitudes towards NCEA changes, and their working experiences (morale and workload views). The participants were 749 teachers from Years 9-13 and Years 7-13 English medium secondary schools who completed our national surveys. Data were analysed quantitatively through descriptive and exploratory techniques. Results suggested a positive association between a perceived culture of ongoing PLD in schools, and teachers' general attitudes towards NCEA changes. Teachers who reported positive attitudes towards the NCEA changes in general, were more likely to understand how these changes can improve outcomes for Māori learners, Pacific learners, and those with disabilities and who need learning support. In addition, a strong culture of ongoing PLD was also positively associated with teachers' morale and workload views. The study has practical implications by indicating how teachers can be better supported to enact educational changes in Aotearoa New Zealand.

Keywords: professional learning development, NCEA, educational change, teacher attitudes, teacher morale, workload

Introduction

Why teacher attitudes towards NCEA changes matter

The National Certificate of Educational Achievement (NCEA) is part-way through an ambitious change process in response to a large public consultation exercise that took place in 2018. The consultation process resulted in a set of recommendations to guide the work of Subject Expert Groups as they reviewed the suite(s) of standards available to assess subjects offered in their area (referred to as RAS — Review of Achievement Standards).

Two of the seven key changes recommended for RAS were to make NCEA more accessible, and to keep Level 1 as an optional level for students who were unlikely to go on to complete an NCEA qualification at level 2. These ideas are potentially challenging if national assessment systems like NCEA are used as a sorting mechanism, both in terms of rationing learning success and in establishing foundations for different learning pathways.

How teachers understand and embrace the new ideas in NCEA and their possible impacts could be essential for further changes to occur, considering one key obstacle to educational change is the fuzziness of new ideas and the strength of old ideas (Jónasson, 2016). Given that teachers are perceived as the agents of/for educational change

(Priestley et al., 2014), this study focuses on teachers' understanding of underlying purposes of the NCEA changes and the degree to which they support those intentions (i.e., their attitudes towards the NCEA changes).

Exploring teachers' understanding and attitudes towards NCEA changes is important, not only for the implementation of the new changes, but also for teachers' own working experiences. Previous research has found salient differences among how schools and teachers enact the same educational shift (Evans, 2000). As suggested by Priestley et al. (2014), whether teachers' current practices and beliefs can be compatible with the new ideas depends on how those changes are understood and acted upon by the teachers. In addition, teachers' working experiences can be largely related to whether they have clarity about the changes and whether they have been prepared to frame the changes around established practices.

How PLD can support the transition within NCEA changes?

In their responses to the 2021 national survey of secondary schools, New Zealand teachers asked for much more help to enact the NCEA changes, and indicated that personal learning is required before they can support students to incorporate mātauranga Māori (traditional knowledge) into teaching and learning (Alansari et al., 2022). This finding suggests that more targeted professional learning and development (PLD) should be designed and offered to teachers to support them to navigate the transitions more smoothly. Studies conducted in Aotearoa New Zealand showed that teachers can be better prepared to adapt to and implement educational change through ongoing PLD and within school collaboration, during which the combined collective knowledge can be harnessed (Fletcher et al., 2020). PLD can not only offer the knowledge and support required in the educational changes, but can also help teachers to better understand the intentions of the shifts and contribute to their beliefs in the impacts of the changes in practices.

Teacher workload and morale

Teachers' perceptions on their work experiences (workload and morale) were measured in our national surveys. Teacher morale is described as "how teachers view themselves, their roles and the level at which their needs are met by the organization" (Mboweni & Taole, 2022, p. 30), which is important for developing a conducive environment for teaching and learning. However, in Aotearoa New Zealand, there seems to be a declining level of teacher morale and increased workload (Alansari et al., 2022), echoed by the consistent international trend related to the Covid-19 pandemic (Kim et al., 2022). Understanding the enabling factors of teachers' positive working experiences is pivotal to reversing such trends.

Previous literature also suggests that educational reform and changes can influence teacher morale and workload, predicated on teachers' attitudes and understanding of such reform or changes (Evans, 2000). How teachers understand and perceive changes to their practice can be related to their morale and how they feel about their workload (Priestley et al., 2014). For example, if the changes were seen as something additional to implement on top of their daily work, rather than as a holistic framework within which coherent educational practice might be developed, then it is more likely for teachers to experience lower levels of morale and feel that their workload is too high or hard to manage.

In contrast, creating a school culture of ongoing PLD and empowerment has been linked to more positive levels of teacher wellbeing. Embedding ongoing opportunities for teachers to come together and share insights or learnings, as well as discuss changes to their practice, are likely to promote greater understanding of these changes, thereby feeling more positively about their work (Gore et al., 2017).

As such, positive teacher views of their working experiences can be positioned as important outcomes of educational change and, in turn, can lead to differences in how teaching and learning are organised and carried out. In this paper, we were interested in NCEA changes as the context for educational change, and whether sentiments towards such change are related to teachers' working experience.

Context and research questions

This study aimed to explore teachers' perceptions and experiences related to the NCEA changes, given their key role in the context of educational changes. Specifically, we investigated the associations between ongoing PLD provision and teachers' attitudes towards NCEA changes (NCEA general attitudes), and how this interaction might contribute to teachers' understanding of equity-related impacts of NCEA changes (NCEA equity-related attitudes). In addition, another purpose of this study was to explore how these factors contribute to teachers' views about their work (namely, their morale and whether they feel their workload is manageable). We posed three research questions:

1. What are teacher perceptions of NCEA changes?
2. What are the associations between teachers' perceptions of NCEA changes (general and equity-related), and their working experiences (workload and morale)?
3. Can a perceived culture of ongoing PLD and teachers' attitudes towards NCEA (general and equity-related) act as enabling factors that positively predict teachers' working experiences (workload and morale)?

Methodology

Participants

A total of 1,093 teachers completed the surveys online between August and December 2021. Our final sample gives a nationally representative picture in terms of school decile and are broadly representative by school area and region (i.e., the distribution of teacher respondents by decile and region aligns with the national distribution of teachers by those two demographics). This paper focuses on data from the 749 teachers who responded to all key items explored in this study. Most teachers self-identified as New Zealand European Pākehā (79%) and female (65%). Most of them (76%) taught in Year 9-15 secondary schools and were more likely to teach in main urban area (73%).

Procedures

Ethical permission was gained prior to the study from NZCER's ethics committee. To ensure national representation of English medium secondary schools across all deciles, 5,376 teachers were randomly chosen from a stratified sample of Years 9-13 and Years 7-13 secondary schools. They were emailed an online link to the survey and an invitation to take part in the research. Data collection was disrupted in August 2021 due to Covid-19, and we had to pause gathering data to reduce the burden on schools. We resumed data collection in November 2021 and closed the survey in December 2022 with a total of 1,093

teacher respondents. Data were cleaned and prepared for analysis using IBM SPSS software.

Measures

For this paper, we analysed closed survey items related to five areas (see Table 1): ongoing culture of PLD, general perceptions and attitudes towards NCEA changes, equity-related attitudes towards NCEA changes, morale, and workload. Tables 2-3, introduced later, include a list of all items we asked of teachers in relation to NCEA, whereas all other items (and their descriptive statistics) are included in the appendix.

Table 1

Factors and sample items

Factor	N of items	Sample items
Ongoing PLD	9	We have good opportunities to explore deeper ideas and theory that underpin new teaching approaches.
NCEA general attitudes	8	Overall, I am positive about the NCEA and RAS changes.
NCEA equity-related attitudes	3	Overall, the NCEA changes will support increased achievement for students with disabilities and those who need learning support.
Morale	4	I enjoy my job.
Workload	4	My workload is manageable.

The conceptual models

Figure 1 shows the hypothesised model which presents the possible associations between factors explored in the current study. We hypothesised that a culture of ongoing PLD would be positively related to teachers’ attitudes towards NCEA changes and, in turn, predict more positive working experiences (i.e., positive morale and manageable workload).

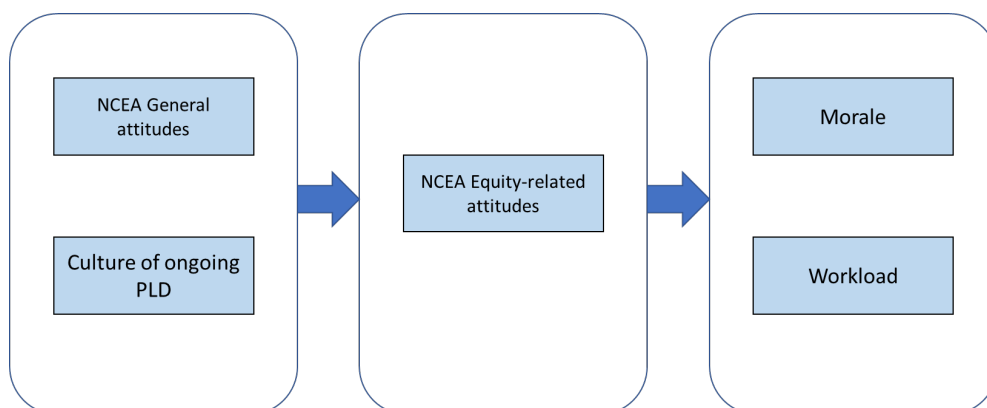


Figure 1. Our hypothesised model

Data analysis plan

Data were analysed quantitatively through descriptive techniques, confirmatory factor analysis (CFA), and structural equation modelling (SEM) techniques based on the maximum-likelihood estimation method. CFA analysis provides evidence for factorial reliability (i.e., whether items can be grouped into factors) prior to conducting SEM. The latter enables exploring the structural relations (direct and indirect) between variables.

As shown in the results sections, a range of indices ($\chi^2/df < 3.0$, $p > .05$; TLI, CFI, and Gamma Hat $> .90$; SRMR $< .05$; and RMSEA $< .08$) were used to evaluate the fit of the measurement and structural equation models. Based on the CFA results, means and standard deviations for the questionnaire factors were calculated, along with Cronbach's alpha reliability estimates and Pearson's bivariate correlations. After that, SEM techniques were then employed to explore the relations between the variables. As a measure of effect size, this study follows Cohen's (1988) conventional guidelines (i.e., 0.1 for "small" or "weak," 0.3 for "medium" or "moderate," and 0.5 for "large" or "strong") to interpret the strength of the standardised regression coefficient paths found in the models (Nakagawa & Cuthill, 2007). All analyses were conducted using the statistical software IBM SPSS Statistics 22 and AMOS.

Results

Descriptive analysis of NCEA views

Tables 2 and 3 show teachers' responses to the item bank of NCEA statements, with Table 2 presenting teachers' general attitudes towards NCEA changes and Table 3 focusing on teachers' equity-related attitudes.

Among all items, teachers showed the most positive attitudes towards changes to the way literacy and numeracy are assessed, through discrete mandatory literacy and numeracy requirements, with 62.9% of the teachers agreeing or strongly agreeing.

Just over half the teachers agreed or strongly agreed that having fewer standards would create a better balance between learning and assessment. Some of this concern can no doubt be attributed to the worry that more is at stake when student assessment is divided into bigger chunks that carry more credits — 52.1% of the teachers agreed or strongly agreed that this change increases the risk that some students will not gain the number of credits needed for an NCEA Level 1 award in their subject.

A similar pattern was found when teachers were asked how they think they understand the curriculum thinking that underpins the new NCEA Level 1 framework for their subject, with over 55.3% agreeing or strongly agreeing, 25.5% giving a neutral response, and 19.5% disagreeing or strongly disagreeing.

Overall, 32.8% of teachers were positive about the NCEA and RAS changes, 39.9% neutral, and 27.2% had negative views. However, two salient concerns were raised around 1) how Level 1 should be assessed, and 2) the workloads related to the NCEA changes. Many teachers do not support the intent to develop Level 1 as an optional level for most students, with 42% disagreeing or strongly disagreeing that Level 1 should mainly be used for students who will not proceed to Level 2, and 27.2% gave a neutral response which suggests they are as yet unsure. This result may be understood with the "pathways" concern that Level 1 is needed to prepare students for Levels 2 and 3 in the subject: 55% of respondents agreed or strongly agreed that this was the case.

There is another indication of concern in that most teachers (61%) disagreed or strongly disagreed that their workloads would reduce once fewer bigger achievement standards were in place, with 21.4% of teachers feeling neutral. This result further

supports our hypothesised model to explore the relations between teachers' attitudes towards NCEA changes and their working experiences (their workload and morale), as well as the potential role of PLD in such relations.

In this early stage of these NCEA changes, most teachers are either neutral or disagree that, overall, they will support increased achievement for Māori students, Pacific students, or those with disabilities or who need additional learning support.

Table 2

Teachers' general attitudes towards NCEA changes

	% Disagree or Strongly Disagree	% Neutral	% Agree or Strongly Agree
I support the new mandatory literacy and numeracy standards.	10.4%	26.7%	62.9%
Having fewer Achievement Standards per subject will help create a better balance between learning and assessment.	24.0%	20.6%	55.4%
I understand the curriculum thinking that underpins the new NCEA Level 1 framework for my subject.	19.5%	25.2%	55.3%
If we don't assess Level 1 in my subject, it will be harder to prepare students for Levels 2 and 3.	26.2%	18.8%	55.0%
Having fewer Achievement Standards per subject increases the risk that some students will not get enough credits to gain an NCEA award in my subject.	26.2%	21.8%	52.1%
Overall, I am positive about the NCEA and RAS changes.	27.2%	39.9%	32.8%
Level 1 NCEA assessments should mainly be used for students who might not continue to Level 2	42.3%	27.2%	30.4%
Teacher workloads will reduce with fewer standards.	61.0%	21.4%	17.6%

Table 3

Teachers' equity-related attitudes towards NCEA changes

Overall, the NCEA changes will support ...	% Disagree or Strongly Disagree	% Neutral	% Agree or Strongly Agree
increased achievement for Māori students.	24.2%	48.7%	27.1 %
increased achievement for Pacific students.	24.3%	53.1%	22.6%
increased achievement for students with disabilities and those who need learning support.	33.4%	53.3%	13.4%

Confirmatory factor analysis (CFA)

CFA was conducted for each survey scale, with a 2-factor solution in the NCEA attitudes factor. In the model of NCEA attitudes, two items were removed because of the low factor loading. The fit indices for these models showed acceptable fit to the data, except for the significant chi-square value (see Table A1 in the Appendix). However, a significant chi-square value was expected given the large sample size in this research (Hooper et al., 2008). Therefore, these factors were retained for further analyses.

Associations between teachers' perceptions of NCEA changes and their working experiences

We first established the reliability of combining item banks into factors for subsequent analysis, as is shown in Table 4. Following the confirmatory factor analysis, we calculated the means, standard deviations, Cronbach's alpha coefficients, skewness, and kurtosis for all factors prior to examining associations between them. A breakdown of item descriptives is included in Tables A2 to A4 in the Appendix.

Table 4

Descriptive Statistics

Factor	M (SD)	α	Skewness	Kurtosis
NCEA general attitudes	3.08 (.65)	.70	-.17	-.07
PLD	3.26 (.70)	.84	-.23	.05
NCEA equity-related attitudes	2.87 (.81)	.92	-.48	.29
Morale	3.56 (.80)	.77	-.51	.14
Workload	3.06 (.91)	.87	-.17	-.70

Pearson's bivariate correlations showed statistically significant associations were found between all factors (see Table A5 in the Appendix). The three strongest associations were between teacher morale and a culture of ongoing PLD ($r = .56$), teachers' general attitudes towards NCEA changes and their equity-related attitudes ($r = .50$), and teachers' morale and their workload ($r = .49$). That is, more positive views of schools' PLD cultures were associated with more positive equity-related attitudes of the NCEA changes. Also, positive morale views were also associated with more positive workload views (i.e., teachers who feel good about their work were more likely to report their workload is manageable).

Exploring relations: A structural equation model

Figure 2 shows a schematic diagram of the empirical model built in this study, with statistically significant paths between the variables. The fit indices indicate the model met the acceptable thresholds ($\chi^2 / (df) = 4.06$, $p = .000$; TLI = .889; CFI = .901; Gamma Hat = .916; SRMR = .067; RMSEA = .064).

Our modelling suggests that having a school culture of ongoing PLD was found to be positively associated with having more positive attitudes towards NCEA changes in general ($r = .30$, $p < .001$). The size of the standardised beta values reported indicates that PLD was a moderate-positive predictor of NCEA general attitudes. Also, statistically significant paths were found from NCEA general attitudes to NCEA equity-related attitudes ($\beta = .56$, $p < .001$) and teachers' morale ($r = .15$, $p < .01$). The size of the standardised beta values reported indicates that NCEA general attitudes were a strong positive predictor of NCEA equity-related attitudes and a weak-to-moderate positive

predictor of teachers' morale. That is, if teachers had generally positive attitudes towards the NCEA changes, it was more likely for them to report that those changes could lead to enhancing equitable outcomes for different groups of students and to have higher level of working morale.

Finally, statistically significant paths were found from PLD to teachers' morale ($\beta = .63, p < .001$) and whether they feel their workload is manageable ($\beta = .28, p < .001$). The size of the standardised beta values reported indicated that PLD was a strong positive predictor of teachers' morale and a medium positive predictor of teachers' perceptions of their workload. The positive paths between PLD and teachers' working experiences meant that better PLD culture in schools predicted higher working morale and teachers are more likely to perceive their workload as manageable.

In general, the model emphasised the key role that teachers' general attitudes towards NCEA changes, coupled with ongoing PLD, might play in contributing to their equity-related views as well as how they view their work.

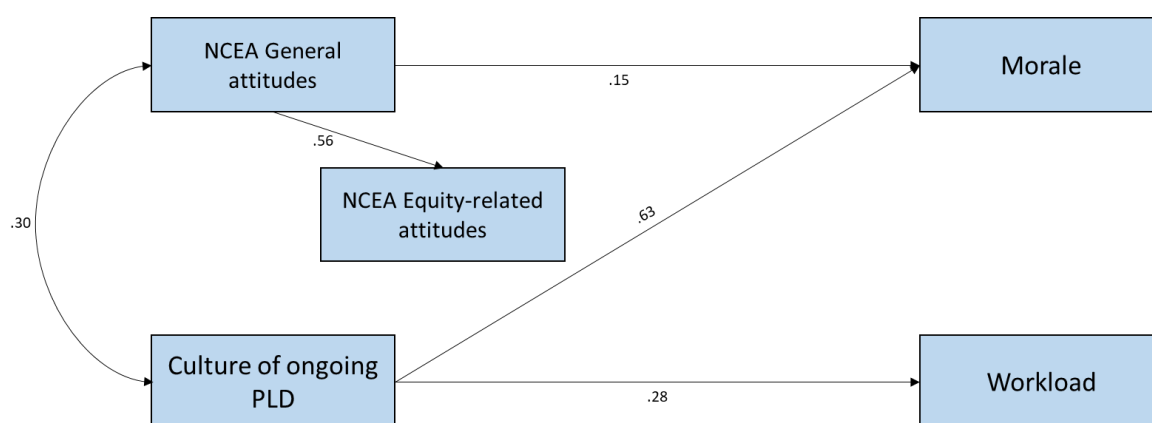


Figure 2. Our model showing statistically significant paths

Discussion

This study focuses on teachers' perceptions and experiences, particularly in relation to how they navigate educational changes. The findings highlight the positive associations between an ongoing culture of PLD and teachers' attitudes towards the NCEA changes, and the role this interaction plays in shaping teachers' equity-related attitudes and their own working experiences.

As evident by our study findings, teachers who felt their schools created an ongoing culture of PLD, or at least created ongoing opportunities for teachers to reflect on and improve practice, they are more likely to report positive attitudes towards NCEA changes. The general preparedness and positive attitudes towards NCEA changes can also contribute to better views of the equity-related impacts NCEA changes could achieve. It seems that PLD could serve as a mechanism through which collective support and expertise could be harnessed to equip teachers with the understanding of the NCEA changes required to make the most positive impact on learner outcomes. In other words, teachers' *understanding* of NCEA changes — through well-designed and tailored PLD — is likely to play a crucial part in the *implementation* of these changes in the years to come.

In addition, a direct link between a school culture of ongoing PLD and teachers' equity-related views was not found in the model presented in the result section. This

finding was somewhat unexpected, as it might suggest that teachers do not consider PLD will improve equity in their contexts. An alternative explanation could be that teachers' beliefs on whether NCEA changes will support equity relies on more than PLD. However, it is worth noting that our survey questions focused on general features of PLD, rather than PLD focused on NCEA changes and associated challenges. The result might have been different if NCEA-specific questions had been posed in relation to PLD. Hence, we emphasise here the importance of targeted PLD content to support the growth of teachers' knowledge and understanding in specific areas of their work.

Limitations and future directions

Firstly, this study enabled explorations on the relations among the factors in the model, but causation cannot be inferred due to the nature of the cross-sectional, exploratory design. Furthermore, this study only explored the predictive roles of PLD and teachers' general attitudes in teachers' equity-related attitudes and their working experiences, whereas the relations between these factors can be potentially multidirectional. Longitudinal designs could be considered in future studies to explore how these factors can influence each other over time.

Secondly, this study involved self-report data only which heavily relies on whether participants are willing to respond honestly (Pekrun & Linnenbrink-Garcia, 2014). Other measure, such as teacher interviews, can be used in future to explore teachers' attitudes towards educational changes and their working experiences in more depth.

Thirdly, even though our final sample size was large enough to undertake the analysis described earlier in the paper, the relatively low response rate (20.3% of all approached teachers agreed to participate) might risk over-generalising the findings to other teachers with different views. Additionally, the data might be potentially biased because data collection was affected by Covid-19 disruptions. We suggest replicating our modelling in future studies with a new sample of teachers when the pressures of Covid-19 have eased off.

Conclusions

The aim of the present study was to explore the enabling role of PLD and teachers' general attitudes towards NCEA changes in Aotearoa New Zealand. The results confirmed the hypothesised conceptual model that PLD and NCEA general attitudes positively predicted NCEA equity-related attitudes and teaching experiences: better perceptions of PLD and NCEA general attitudes predicted better NCEA equity-related attitudes, higher levels of teachers' morale, and the more manageable workload. In essence, our modelling suggests that ongoing PLD as a school-level factor can not only contribute to teachers' attitudes towards changes, but also how teachers perceive their own work. This points to the importance of ongoing investment in PLD opportunities when supporting teachers as they navigate changes in their practice.

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Appendix

Table A1

Goodness of Fit Indices for the Survey scales

	χ^2 / df	$\chi^2 (df)$	Gamma Hat	TLI	CFI	RMSEA	SRMR
Acceptable Values	≤ 3.0	$p > .05$	$\geq .90$	$\geq .90$	$\geq .90$	$\leq .08$	$\leq .05$
NCEA attitudes	3.088	.000	.986	.978	.986	.053	.043
PLD	2.629	.000	.989	.973	.983	.047	.030
morale	3.062	.047	.997	.986	.995	.053	.019
workload	2.039	.130	.999	.996	.999	.037	.011

Note: The 2-factor model of “NCEA attitudes” is consisted of the “NCEA general attitudes” and “NCEA equity-related attitudes”.

Table A2

Teacher views of the culture of PLD in the school

	% Disagree or Strongly Disagree	% Neutral	% Agree or Strongly Agree
Discussions about teaching practices within my department have enriched my work.	13.6%	17.4%	69.0%
I have been challenged to rethink some of my assumptions about what my students can do.	17.0%	23.6%	59.4%
I have found my subject association useful.	12.4%	28.3%	59.3%
I have been able to easily access a helpful network of teachers who are interested in similar things to me.	23.6%	23.8%	52.6%
I've had good opportunities to see and discuss the work of other teachers in our school.	28.0%	20.4%	51.5%
School / curriculum leaders provide professional readings that we discuss as a staff / curriculum team.	35.5%	19.8%	44.7%
We have good opportunities to explore deeper ideas and theory that underpin new teaching approaches.	33.5%	27.0%	39.5%
I have found whole-school PLD useful.	39.4%	25.1%	35.5%
I have been able to easily access helpful specialist advice outside the school when I need it.	41.8%	28.0%	30.2%

Table A3

Teachers' morale

	% Disagree or Strongly Disagree	% Neutral	% Agree or Strongly Agree
I enjoy my job.	6.8%	10.5%	82.6%
I get the support that I need inside the school to do my job effectively.	20.6%	19.5%	59.9%
This school cares about the wellbeing of its staff.	24.7%	20.4%	54.9%
I get the support that I need outside the school to do my job effectively.	19.4%	31.0%	49.7%

Table A4

Teachers' workload

	% Disagree or Strongly Disagree	% Neutral	% Agree or Strongly Agree
My workload is so high I am unable to do justice to the students I teach.	27.1%	27.4%	45.5%
My workload is manageable.	32.2%	25.1%	42.7%
My workload is fair.	35.0%	24.2%	40.9%
The level of work-related stress in my job is manageable.	39.4%	24.3%	36.3%

Table A5

Correlations between different factors

	NCEA general attitudes	PLD	NCEA equity-related attitudes	Morale	Workload
NCEA general attitudes	1				
PLD	.25***	1			
NCEA equity-related attitudes	.50***	.22***	1		
Morale	.32***	.56***	.26***	1	
Workload	.16***	.26***	.18***	.49***	1

Note: *** Correlation is significant at the 0.001 level (2-tailed)

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