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How does teacher well-being affect student learning?

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Abstract

Teacher well-being is predominantly explored in terms of its deficits, due to reports of stress and burnout being highly prevalent across the teaching workforce. Teacher well-being (and lack of) is considered to have a small influence on student learning and achievement. The research on mechanisms which underlie this influence mostly report indirect links, through teacher engagement, teacher student relationships (TSRs) and teacher quality. However, there are massive gaps in the literature, and concerns over methodology (especially causality and generalisability), defining constructs (teacher quality) and weak links to student learning (teacher engagement). Currently TSRs appear to be the most plausible mediator between well-being and student learning. EPs are in a good position to support teacher well-being and facilitate positive effects on student learning. Helping to foster positive TSRs and school climates, promoting the use of supervision, and delivering stress management programmes may be particularly useful. Future research should focus on how teacher well-being can positively influence student learning. By knowing what works, this may then aid interventions to help stressed teachers and develop positive environments for learning.

How does teacher well-being affect student learning?

Well-being is defined as a "state of being comfortable, healthy or happy" (The New Oxford Dictionary of English, 2017, para 1). In this state, a person can work productively, develop positive relationships with others and participate in society (Beddington et al., 2008). Well-being also involves feelings of satisfaction and optimism, alongside a sense of control and purpose in life (Edmunds et al., 2013).

Stress can have a major effect on our physical, emotional and mental well-being (Education Support Partnership [ESP], 2017). Teachers are one of the most stressed out workforces in the UK (only second to ambulance drivers), with over 50% feeling severely stressed and considering leaving the profession as a result (National Union of Teachers [NUT], 2012).

'Teacher stress' refers to the negative emotional experiences of teachers (such as frustration and irritability) in response to occupational demands (such as differentiating the curriculum) (Kyriacou, 2001). Teacher stress is pervasive across countries (European Trade Union Committee for Education [ETUCE], 2011) and reported to have numerous causes, such as excessive workload, rapid change and student behaviour (ESP, 2017). The effects of stress are vast, involving high rates of attrition, absenteeism and ill-health (NUT, 2012). Stress can also lead to lower job satisfaction and burnout (Hakanen, Bakker and Schaufeli, 2006). Burnout is a syndrome consisting of emotional exhaustion (emotional overstrain and reduced resources), depersonalisation (cognitive distancing towards job recipients) and reduced personal accomplishment (inefficacy to carry out job and complete work demands) (Maslach and Leiter, 1999), and often regarded as the consequence of pro-longed stress (Wong, Ruble & McGrew, 2017).

Teacher well-being (or lack of) is also thought to have a significant effect on student learning (Arens and Morin, 2016, Gray, Nordstokke & Wilcox, 2017; Wong et al., 2017). Learning can be defined as the "process through which experience causes permanent change in knowledge or behaviour" (Woolfolk, 2013, p.268) and is often quantified in terms of academic 'achievement' or 'outcomes' in the literature. As academic achievement is considered to cover a wide range of educational outcomes (Steinmayr, Meibner, Weidinger & Wirthwein, 2017), its definition depends on the variables used to measure it (such as school grades and standardised assessment tests). It is important to note that achievement is not always an absolute measure of student learning, as it can be influenced by a variety of factors, such as effort or motivation (Arens and Morin, 2016). Nevertheless, researchers have made several direct links between teacher stress and student academic achievement, for example in maths and reading (Arens and Morin, 2016; Klusmann, Richter and Lüdtke, 2016). Studies showing these direct links are limited, and predominately the effect of poor teacher-wellbeing is explained indirectly through teaching quality, teacher engagement and teacher-student relationships.

In this essay I will explore the potential effects of teacher well-being on student learning, and how this effect may occur (both directly and indirectly as mentioned above). Primarily, I have used research on academic achievement, as it is considered to cover a variety of learning domains and educational outcomes (Steinmayr et al., 2017). As most of the literature focuses on well-being in terms of its deficit, I will mainly concentrate on the effect of stress and burnout. Due to the pervasive nature of stress, research will be drawn from the UK, Europe, America and Australia, to form a better picture of its influence. Lastly, I will reflect on how this is relevant for EPs and their practice.

Teacher well-being (or lack of) is highly relevant for several reasons. Firstly, teacher stress and burnout has become a major topic in research and the media, due to reports of significant problems in retention, turnover and mental health (ESP, 2017). Secondly, if teacher stress also influences student learning, it may be that Educational Psychologists (EPs) need to consider how best to support teachers to reduce possible negative effects. EPs are already considered to be well-placed to carry out this role (Gray et al., 2017; Kipps-Vaughan, 2013).

Effects of teacher well-being on student learning

Literature on the effects of teacher well-being on student learning is limited. Recently, Briner and Dewberry (2007) carried out a large-scale project exploring the links between staff well-being and school performance (using an online survey and standard attainment test scores). Data was collected from staff in primary and secondary schools between 2002-2005. They found a significant positive association between teacher well-being and SATs results in primary schools, with well-being accounting for 8% of school performance variance. In secondary schools, they also found a significant positive association between teacher well-being and the percentage achieving level 2 results at KS4. This study suggests well-being can have a small, but significant effect on learning. However, this influence was only found to be significant in 2004 (the year most data was collected) and, it may be more important to note, 92% of variance was accounted for by other factors, such as social class. Care also needs to be taken when interpreting cross sectional data, as the direction of causality cannot be inferred. It may be that pupil performance influences teacher well-being, although this relationship is suggested to be reciprocal (Briner and Dewberry, 2007).

Most research focuses on the effects of stress and burnout on student learning (e.g. Arens and Morin, 2016; Wong et al., 2017). Klusmann, Richter and Lüdtke (2016) investigated the association between teachers' level of emotional exhaustion and students' maths achievement (using standardised tests) with data from 1,102 maths teachers and 20,002 students. They found a small ($\Delta = 0.13$), but significant negative association between teachers' emotional exhaustion and students' test scores. Although small, the researchers suggest this effect is important, as teachers with high burnout could accumulate this negative effect on several classes long-term (Klusmann et al., 2016). Longitudinal studies would be helpful to explore this possibility further. Another large-scale study by Arens and Morin (2016) also found classes taught by teachers with high levels of emotional exhaustion showed lower levels of academic achievement on both school grades and standardised tests. Despite problems with causality and generalisability (e.g. Klusmann et al.'s (2016) study is only based on German schools and one subject), these studies did control for characteristics known to influence test results and are grounded in large sample sizes. Indeed, the reading literacy data used in Arens and Morin's (2016) study is drawn from 40 different countries with high scoring reliability (Martin, Mullis and Kennedy, 2007).

These studies report small, but significant effects of teacher well-being and stress on student learning and achievement. Although these results may not be large, teacher well-being is a factor which could be influenced by schools much more easily than, for example, socio-economic status or special educational needs. Improvements in teacher well-being should then filter down to the students they teach, leading to better academic outcomes. Having explored the effect of teacher well-being on student learning, I shall now go on to explore the possible mechanisms behind *how* teacher well-being causes this effect.

The mechanisms: how teacher well-being affects student learning

Currently, researchers remain unclear as to how exactly teacher well-being (or lack of) can

influence student learning. Most research explores how stress can influence student learning, yet few studies have found direct links between these two elements. Predominantly the research has been explorative and suggests indirect links through teacher-student relationships, teacher quality and teacher engagement. In this section I will explore each of these avenues further, with a focus on student learning and academic achievement.

Teacher-student relationships

There is substantial evidence for the importance of teacher-student relationships (TSRs) on all aspects of student development, including academic, social and emotional (Cornelius-White, 2008; Roorda, Koomen, Split & Oort, 2011). Positive TSRs are thought to be characterised by 'warmth', low conflict and high levels of support (Rimm-Kaufman and Sandilos, 2011). Students with teachers that show more empathy, warmth and encouragement of learning are reported to have better cognitive outcomes (Cornelius-White, 2008). In comparison, negative TSRs are characterised by conflict, where the teacher is often irritable or angry towards the student(s) (Rimm-Kaufamn & Sandilos, 2011). It is possible these negative relationships could then have an impact on students' learning, such as lower reading and maths achievement (Hamre and Pianta, 2001; McCormick and O'Connor, 2014). However, as these are correlational studies, causality cannot be assumed.

Several meta-analyses have been carried out to review the vast amount of literature investigating the association between TSRs and student outcomes. Cornelius-White (2008) carried out a meta-analysis of 119 studies and found a moderate association between positive TSRs and cognitive student outcomes (r = .36). Roorda et al.'s (2011) meta-analysis of 99 studies (preschool to high school) only found a small association between TSRs and achievement (positive: r = .16, negative: r = -.15), but this remained significant and stable over time. Several recent longitudinal studies have also shown the importance of TSRs on academic achievement long-term (Caputi, Lecce & Pagnin, 2017; Sointu, Savolainen, Lappalainene & Lambert, 2017). For example, in a two-year study exploring school grades and TSRs of Finnish students from grade five to seven, a significant positive association between TSRs and academic achievement was found (Sointu et al., 2017). Consequently, teacher-student relationships are considered to be an important factor in student academic outcomes (Hattie, 2009; Roorda et al., 2011; Sointu et al., 2011).

Stress is thought to have a negative effect on teacher-student relationships and thus academic achievement. Jennings and Greenberg (2009) propose that deficits in teacher well-being can provoke a 'burnout cascade'. This is where deteriorating classroom climates lead to teacher emotional exhaustion, causing them to resort to harsher and more reactive responses, which may exacerbate disruptions further. They suggest this 'cascade' will have a disastrous effect on TSRs, influencing both classroom and student academic outcomes. This negative feedback cycle has also been suggested by several other researchers (e.g. Chang & Davis, 2009; Yoon, 2002). For example, Yoon (2002) reports teacher stress, caused by disruptive behaviour, can predict the number of students to whom they have negative relationships with.

Several studies support the association between stress, TSR quality and academic outcomes. Murray-Harvey and Slee's (2007) study of 888 students in years five to nine found TSR quality to be the most important relationship (compared to peer and family relationships) for academic outcomes, with moderate associations for both positive (r = .33) and stressful (r = -.48) TSRs. However, as all of the measures were self-report, it is important to consider possible biases. For example, several of the 'academic performance' measures were rated by the teachers on a scale, which may have been influenced by the 'grading on a curve' phenomenon (Arens & Morin, 2016). This is where the class itself can act as a reference for how the scores are distributed, making it difficult to compare scores between classes. Nevertheless, the importance of TSRs has also been reported by researchers using standardised outcomes. Hamre and Pianta (2001) investigated whether teachers' perceptions of relationships with their students would predict academic outcomes by following 179 children from Kindergarten through to eighth grade. They found teachers' reports of negative relationships (characterised by conflict and overdependency) significantly predicted student grades, standardised test scores and work habits. Although the variance was small, the researchers suggest that as the study ran over eight years, the significant findings show early TSR quality is important for later academic success.

Overall, there is strong evidence that teacher-student relationships are highly important for student learning and academic achievement (Cornelius-White, 2008). Despite reports of small variance, researchers suggest stress can have a significant negative effect on teacher-student relationships and subsequently on student academic outcomes (Jennings & Greenberg, 2009; Murray-Harvey & Slee, 2007). As positive TSRs are also thought to be important for teacher well-being (Spilt, Koomen & Thijs 2011), EP focus and interventions in this area may be particularly useful for both students and teachers. This will be discussed further in the implications section.

Teacher quality

'Teacher quality' or 'effectiveness' lacks a consistent, formal definition in the literature, which has made it difficult to research and identify its consequences (Ding and Sherman, 2008). Yet teacher quality is thought to be particularly important for student learning and achievement (Hattie, 2009). For example, Hattie and Clinton (cited in Hattie, 2009) explored differences in teaching quality between teachers who had passed their National Board Certificate[1] and those just below the pass mark for this certificate. They found newly qualified teachers challenged their students more, had a deeper understanding of their teaching and its effects, alongside greater control and passion for teaching and learning. These effects on writing achievement were small (d = 0.13), however 74% of student work in classes of newly-qualified teachers were considered to show deeper understanding, compared to just 29% for non-qualified teachers. Deeper understanding is thought to be more effective for learning and future achievement (Hattie, 2009). Additionally, instructional practice is seen as a key factor of teacher quality (Ding and Sherman, 2008) and several other researchers have also highlighted

[1] National Board for Teaching Standards

its importance for student learning (e.g. Crosnoe et al., 2010; Grammer, Coffman, Sidney & Ornstein, 2016). For example, a recent review of 38 meta-analyses by Schneider and Preckel (2017) revealed strong moderator effects of instructional methods on student achievement.

Research exploring the effect of stress on student achievement and learning through teacher quality is very limited. Recently, Wong et al. (2017) investigated direct and indirect effects (including through teaching quality and student engagement) of burnout and stress on individualised education programme (IEP) outcomes for young people with autism. Teaching quality was measured using the Teacher Behaviour Scale (Mahoney & Wheeden, 1999), which includes factors such as a teacher's level of supportiveness and responsiveness, and the degree to which they participate in the child's play or encourage specific learning tasks. They found teacher stress had a direct negative influence on teaching quality and thus indirectly on IEP outcomes. The researchers suggest that increased stress and depersonalisation can lead to poorer teaching quality, which in turn causes student engagement to decline, thus resulting in poorer academic outcomes (Wong et al., 2017). Caution is warranted with generalising these findings, as the study is very specific (focuses only on early years and children with autism) and does not control for several potential influencers, such as school climate and social support. The stress measure also only focused on stress from a single student, whereas it would be interesting to see the effect of general stress on teaching quality and achievement across mainstream and special needs schools. Importantly, this is one of the first studies to show that stress and burnout can have a direct effect on teaching quality and thus student achievement.

Several researchers have focused on how stress can affect teachers' instructional practice and the subsequent effect on student learning (Klusmann, Kunter, Trautwein, Lüdtke & Baumert, 2008; Pakarinen et al., 2010). Pakarinen and colleagues (2010) examined the extent to which teacher stress and observed teaching practices (including instructional support, classroom organisation and emotional support) predict kindergarten children's phonological awareness (important skill for learning to read and spell; Moats & Tolman, 2017). They found high levels of teacher stress negatively predicted children's phonological awareness, with the child's motivation as a mediator. This suggests stress can have an influence on important pre-reading skills. There may be problems with generalising this study as kindergartens may be organised differently across and within cultures. Furthermore, other researchers have not found a strong link between stress, teacher qualities and student achievement (e.g. Klusmann et al., 2008). However, as Klusmann and colleagues (2008) only measured four teaching qualities, it may be possible that other qualities are more important for achievement, such as high expectations (Hattie, 2009).

Teacher quality is considered to be a crucial contributor to student learning and achievement (Hattie, 2009). However, due to lack of a formal definition, teacher quality encompasses a wide and diverse range of factors, with no clear indication as to which are most important for learning. Attempts to identify the impact of stress on this relationship are also limited and do not follow a unified model of teacher qualities. Future research should aim to develop a model of the essential teaching qualities for academic achievement, which would then allow the

effect of stress on this relationship to be explored more fully.

Teacher Engagement

Work engagement refers to the "positive, fulfilling, work-related state of mind that is characterised by vigour, dedication and absorption" (Hakanen et al., 2006). Teacher engagement is thought to be related to the teacher's commitment and effort (Hanover Research, 2015) and highly important for student learning and achievement (E.g. Louis and Ingram, 1996; Guthrie and Baker, 2000). Yet the research exploring this relationship is limited and mostly reports correlational associations (Hanover research, 2015).

A recent report by Gallup (American research-based company) (2014) suggests 70% of US teachers are not engaged with work. Similarly, only about half of UK teachers report feeling engaged, with the rest feeling either 'ambivalent' (neither engaged or disengaged) or disengaged completely (Lynch, Worth, Bamford & Wespieser, 2016). According to the Gallup report, disengaged teachers are less likely to show effective teaching or build positive and responsive relationships with their students. They are also likely to spread negativity, which affects the school environment and student learning. These conclusions are based on a survey carried out on schools in three Texas districts, in which they found in schools with engaged staff, more students passed standardised tests than schools with less engaged staff (reported in 2011 Gallup report). Specifically, schools in the top 15% of average teacher engagement scores, passed 8.7% more students in all their tests, than schools in the bottom 15% (Gordon, 2006). This has led Gordon (2006) to conclude that teacher engagement is the most important factor for student learning and achievement.

These are bold conclusions to make from only one survey carried out in a single state in America. Evidence from other studies show more mixed results. For example, in his dissertation, Valenta (2010) explored effects of teacher engagement on student achievement in reading and maths across grade four to eight in 28 Texas schools using Gallup measures. He found no conclusive evidence that teacher engagement can uniformly effect student achievement in these subjects. Recently, Schechter and colleagues (2017) investigated how teacher engagement in a blended learning reading programme could influence student motivation and learning outcomes. Analysis of data from 19,366 students across 624 schools identified a significant effect of teacher engagement; students of engaged teachers showed greater commitment to using the programme and achieved more. The researchers only collected performance data from the blended learning programme, whereas it would be helpful to see effects on overall reading skills. Nevertheless, this study does suggest teacher engagement may have some influence on student learning and achievement.

Despite limited evidence, it has been theorised that burnout and stress can indirectly affect student learning through teacher engagement (Brown Centre Report, 2014; Briner and Dewberry, 2007). Several researchers consider burnout and engagement to be on opposite ends of a continuum, rather than existing as separate constructs (e.g. Leiter and Maslach, 2004; Cole, Walter, Bedeian & O'Boyle, 2012). This means that as teachers move towards burnout, they will become less engaged with work. Mojsa-Kaya, Golonka and Marek (2015)

examined this relationships among 205 Polish teachers and found that teachers with burnout showed a higher level of misfit between their expectations and the perceived workplace environment (including perceptions of workload, control, reward, community, fairness and values) compared to engaged teachers. This misfit was especially found in the areas of control and workload. In comparison, engaged teachers were more self-directed and had lower levels of negative emotions. Interestingly, a lack of job resources (including control, supervisory support, school and social climates) to meet demands has been identified as a potential mediator of burnout on teacher engagement (Hakanen et al., 2006).

Searches carried out on several databases (ERIC, Psychinfo and Google Scholar) identified only one relevant study exploring the relationship between stress, teacher engagement and academic achievement (Klusmann et al., 2008). Klusmann and colleagues (2008) examined data from 1,789 teachers to explore the relationship between Schaarschmidt, Kieschke and Fischer's (as cited in Klusmann et al., 2008) self-regulatory types (reflecting engagement and resiliency) and academic achievement. They found 'H-type' teachers (characterised by high scores on occupational engagement and resilience) had most favourable results on measures of wellbeing, including lowest levels of emotional exhaustion and highest job satisfactions. However, no significant relationship was found between these self-regulation types and students' maths achievements. This may be due to study limitations, for example the assessment was not tailored to the German curriculum and unfortunately, the cross-sectional design makes it difficult to identify factors that account for achievement. This study provides evidence that burnout can affect engagement, but further study is required to identify whether this could then influence achievement.

There is inconclusive evidence to suggest that teacher engagement can have a strong effect on student learning. The research exploring the relationship between teacher burnout, engagement and student learning is also very limited. This may be because there is still uncertainty as to whether engagement and burnout are separate constructs. Recently, there has been some evidence for an engagement-burnout continuum (Cole et al., 2012). Teacher engagement is still considered to be important for student learning and engagement (see above), and for preventing high turnover and absenteeism (Hastings and Agrawal, 2015). Future research should explore strategies that help teachers to feel engaged and whether their engagement significantly influences student learning.

Conclusions and Implications for EPs

There is a widespread belief that teacher well-being is important for student learning and achievement (Bricheno et al., 2009). However, this essay shows that the research to evidence this belief is limited and not without methodological issues (causality being the most common and problematic issue). The research covered in this essay suggests that teacher well-being or deficits in well-being, can have small, but significant effects on student learning. Stress and burnout have negative effects, whilst teacher well-being can positively influence learning.

In terms of mechanisms, there are significant gaps in the literature, which mostly reports indirect links through teacher-student relationships, teacher engagement and teacher quality.

Currently, TSRs appear the most researched and plausible mechanism, as there is clear evidence for their importance in student learning and modest effects of stress/burnout on this relationship. Positive TSRs also appear to benefit teacher well-being (Spilt et al., 2011). Whilst teacher quality is considered to be crucial for learning (Hattie, 2009), problems with defining this construct have led to diverse areas of research and no clear model with which to measure the effect of teacher well-being. Similarly, there is inconclusive evidence for the importance of teacher engagement for learning, and the research exploring effects of well-being on this link is elusive. It should also be noted this essay could not cover all the possible mechanisms through which poor teacher well-being can have an impact on student learning and achievement. For example, staff absenteeism, high turnover and early retirement caused by stress are also reported to affect learning (see Bajorek, Gulliford & Taskila, 2014).

Although teacher well-being is reported to have only a small effect on student learning, it is a factor that could be easily improved by schools compared to other variables, such as socio-economic status (Briner and Dewberry, 2007). Given EPs' key role in promoting well-being and their position in schools, they are well placed to aid this process. In particular, EPs should be encouraging teachers to foster positive TSRs, as this is evidenced to enhance both student learning and their own well-being (Roffey, 2012). This could be done by raising teacher awareness of the importance of TSRs and reframing situations to encourage more systemic thinking in teachers. Direct interventions could also involve video modelling or interactive guidance to identify successful interactions with young people and boost teachers' confidence (Gavine & Forsyth, 2011).

As teacher well-being can also be enhanced through good relationships with colleagues (Briner and Dewberry, 2007), supervision may be a useful strategy to help support stressed teachers. Stress management programmes implemented by EPs have also reported to be successful (Kipps-Vaughan, 2013) and helping schools to develop a positive environment or 'climate' (e.g. through developing support systems and an inclusive ethos) is strongly evidenced to enhance both learning and teacher well-being (Thapa, Cohen, Guffey & Higgins-D'Alessandro, 2013). Consequently, EPs should not hesitate to promote teacher well-being, as the effects are likely to be beneficial for both teachers and students.

Future research should move away from focusing purely on deficits in well-being and towards the positive effect teacher well-being can have on their students. By knowing what works, researchers can then identify the essential factors or strategies involved and use this to guide interventions to reduce stress and burnout. With happier, healthier and more effective teachers, it is likely our students will also thrive.

References

Arens, A. K., & Morin, A. J. S. (2016). Relations between teachers' emotional exhaustion and students' educational outcomes. *Journal of Educational Psychology, 108*(6), 800-813. Doi:10.1037/edu000010510.1037/edu0000105.

Bajorek, Z., Gulliford, J., and Taskila, T. (2014) *Healthy teachers, higher marks? Establishing a link between teacher health & wellbeing, and student outcomes*. Retrieved 26/10/17 from: https://www.educationsupportpartnership.org.uk/sites/default/files/resources/healthy_teachers_higher_marks_report_0.pdf

Beddington, J., Cooper, C. L., Field, J., Goswami, U., Huppert, F. A., Jenkins, R., Thomas, S. M. (2008). The mental wealth of nations. *Nature, 455*(7216), 1057-1060. Doi: 10.1038/4551057a.

Bricheno, P., Brown, S., & Lubansky, R. (2009). *Teacher wellbeing: A review of the evidence.* London: Teacher Support Network.

Briner, R., Dewberry, C. (2007) *Report for worklife support on the relation between well-being and climate in schools and pupil performance*. Retrieved 10/10/17 from https://www.scribd.com/document/34205400/Staff-wellbeing-is-key-to-school-success-Full-Report.

Caputi, M., Lecce, S., & Pagnin, A. (2017). The role of mother–child and teacher–child relationship on academic achievement. *European Journal of Developmental Psychology, 14*(2), 141-158. Doi:10.1080/17405629.2016.1173538

Chang, M.L., Davis H.A. (2009). Understanding the role of teacher appraisals in shaping the dynamics of their relationships with students: Deconstructing teachers' judgments of disruptive behaviour/students. In: Schutz, P., Zembylas, M. (Eds.). *Advances in Teacher Emotion Research: The impact on teachers' lives* (p. 95-127). Boston, MA: Springer.

Cole, M.S., Walter, F., Bedeian, A.G., & O'Boyle, E.H. (2012). Job burnout and employee engagement: A meta-analytic examination of construct proliferation. *Journal of Management*, *38*(5):1550–81, http://dx.doi.org/10.1177/0149206311415252.

Cornelius-White, J. (2007). Learner-centered teacher-student relationships are effective: A meta-analysis. *Review of Educational Research, 77*(1), 113-143. Https://doi.org/10.3102/003465430298563

Crosnoe, R., Morrison, F., Burchinal, M., Pianta, R., Keating, D., Friedman, S. L., & Clarke-Stewart, K. A. (2010). Instruction, teacher–student relations, and math achievement trajectories in elementary school. *Journal of Educational Psychology, 102*(2), 407-417. Doi:10.1037/a0017762

Ding, C., & Sherman, H. (2008). Teaching effectiveness and student achievement: Examining the relationship. *Educational Research Quarterly, 29*(4), 39-49.

Edmunds, S., Biggs, H., Goldie, I., Cyhlarova, E., Lawton-Smith, S., McCulloch, A., & Carson, J. (2013) *Let's get physical: the impact of physical activity on well-being. Mental Health Foundation*. Retrieved 16/10/17 from: https://www.mentalhealth.org.uk/sites/default/files/lets-get-physical-report.pdf

Education Support Partnership (2017). *Mental health and wellbeing in the education profession.* Retrieved 29/09/17 from https://www.educationsupportpartnership.org.uk/sites/default/files/education_staff_health_survey_2017_ed_support_yougov.pdf

European Trade Commission for Education (2011). *Teachers' work-related stress: Assessing, comparing and evaluating the impact of psychosocial hazards on teachers at their workplace.* Retrieved 20/10/17 from https://www.csee-etuce.org/images/attachments/WRS_Brochure_EN.pdf

Gallup (2011). *Gallup student poll technical report*. Retrieved 22/09/2017 from: http://www.gallup.com/services/177095/gallup-student-poll-technical-report.aspx

Gallup (2014). *State of America's schools: The path to winning again at education*. Retrieved

22/09/2017 from: http://www.gallup.com/services/178769/state-america-schools-report.aspx

Gavine, D. & Forsyth, P. (2011). Use of VIG in schools. In Kennedy, H., Landor, M., & Todd, L. (Ed), *video interaction guidance: A relationship-based intervention to promote attunement, empathy and wellbeing* (p134-144). London: Jessica Kingsley Publisher.

Gordon, G. (2006). *Building engaged schools: Getting the most out of America's classrooms*. US: Gallup Press.

Grammer, J. K., Coffman, J. L., Sidney, P., & Ornstein, P. A. (2016). Linking teacher instruction and student achievement in mathematics: The role of teacher language. *Journal of Cognition and Development, 17*(3), 468-485. Doi: 10.1080/15248372.2015.1068777

Gray, C., Nordstokke, D., & Wilcox, G. (2017). Teacher mental health, school climate, inclusive education and student learning: A review. *Canadian Psychological Association*, *58*(3), 203–210. Doi:10.1037/cap0000117.

Guthrie, J.T., Dreher, M.J. & Baker, L. (2000). Why teacher engagement is important to student achievement. In: Baker, L., Dreher, M.J., & Guthrie, J.T. (Eds.). *Engaging young readers* (p. 1-16). New York: The Guilford Press.

Hakanen, J. J., Bakker, A. B., & Schaufeli, W. B. (2006). Burnout and work engagement among teachers. *Journal of School Psychology, 43*, 495-513. Doi:10.1016/j.jsp.2005.11.001

Hamre, B., & Pianta, R. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development, 72*(2), 625-38. Doi: 10.1111/1467-8624.00301

Hanover Research (2015). *Quality feedback, teacher engagement and student achievement*. Retrieved 22/09/2017 from: http://gssaweb.org/wp-content/uploads/2015/04/Quality-Feedback-Teacher-Engagement-and-Student-Achievement-1.pdf

Hastings, M. & Agrawal, S. (2015). *Lack of teacher engagement linked to 2.3 million missed workdays*. Retrieved 26/10/2017 from: http://news.gallup.com/poll/180455/lack-teacher-engagement-linked-million-missed-workdays.aspx

Hattie, J. (2009). *Visible learning : A synthesis of over 800 meta-analyses relating to achievement*. London: Routledge.

Jennings, P.A., & Greenberg, M.T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research, 79*(1), 491-525. Doi:10.3102/0034654308325693

Kipps-Vaughan, D. (2013). Supporting teachers through stress management. *Education Digest, 79*(1), 43-46.

Klusmann, U., Kunter, M., Trautwein, U., Lüdtke, O., & Baumert, J. (2008). Teachers' occupational well-being and quality of instruction: The important role of self-regulatory patterns. *Journal of Educational Psychology, 100*(3), 702-715. Doi:10.1037/0022-0663.100.3.702

Klusmann, U., Richter, D., & Lüdtke, O. (2016). Teachers' emotional exhaustion is negatively related to students' achievement: Evidence from a large-scale assessment study. *Journal of Educational Psychology, 108*(8), 1193-1203. Http://dx.doi.org/10.1037/edu0000125

Kyriacou, C. (2001). Teacher stress: Directions for future research. *Educational Review, 53*(1), 27–35. Http://dx.doi.org/10.1080/001319101 20033628

Leiter, M.P, & Maslach C. (2004). Areas of worklife: A structured approach to organizational predictors of job burnout. In: Perrewe P, Ganster D.C. (Eds.) *Research in occupational stress and wellbeing. Emotional and physiological processes and positive intervention strategies* (p. 91–134). Oxford: Elsevier.

Louis, K.S., & Ingram, D. (1996). Schools that work for teachers and students. In: Williams, B.

(Eds.) *In closing the achievement gap: A vision for changing beliefs and practices* (p.154-177). Alexandria: Association for Supervision and Curriculum Development.

Lynch, S., Worth, J., Bamford, S. And Wespieser, K. (2016). *Engaging teachers: NFER analysis of teacher retention.* Slough: NFER.

Mahoney, G., & Wheeden, C. A. (1999). The effect of teacher style on interactive engagement of preschool-aged children with special learning needs. *Early Childhood Research Quarterly*, 14, 51–68. Doi:10.1016/S0885- 2006(99)80004-0

Martin, M.O., Mullis, I. & Kennedy, A. (2007). *PIRLS 2006 technical report*. Retrieved 19/10/17 from https://timss.bc.edu/PDF/p06_technical_report.pdf

McCormick, M. P., & O'Connor, E. E. (2014). Teacher-child relationship quality and academic achievement in elementary school: Does gender matter? *Journal of Educational Psychology, 107*(2), 502-516. Http://dx.doi.org/10.1037/a0037457

Michael, P. L., & Christina, M. (1999). Six areas of worklife: A model of the organisational context of burnout. *Journal of Health and Human Services Administration, 21*(4), 472-489. Doi:10.1016/S1479-3555(03)03003-8.

Moats, L., & Tolman, C. (2017). *Why phonological awareness is important for reading and spelling*. Retrieved 31/10/17 from: http://www.readingrockets.org/article/why-phonological-awareness-important-reading-and-spelling.

Mojsa-Kaja, J., Golonka, K., & Marek, T. (2015). Job burnout and engagement among teachers - worklife areas and personality traits as predictos of relationship with work. *International Journal of Occupational Medicine and Environmental Health, 28*(1), 102-119. Doi: 10.13075/ijomeh.1896.00238.

Murray-Harvey, R., & Slee, P. T. (2007). Supportive and stressful relationships with teachers, peers and family and their influence on students' social/emotional and academic experience of school. *Australian Journal of Guidance and Counselling, 17*(2), 126-147.

National Union of Teachers (2017). *Teacher stress.* Retrieved 19/10/17 from https://www.teachers.org.uk/files/TACKLING-STRESS-0713.doc

Pakarinen, E., Kiuru, N., Lerkkanen, M.K, Poikkeus, A.M., Siekkinen, M. & Nurmi, J.E. (2010). Classroom organization and teacher stress predict learning motivation in kindergarten children. *European Journal of Psychology of Education, 25*(3), 281-300. Https://doi.org/10.1007/s10212-010-0025-6.

Rimm-Kaufman, S., & Sandilos, L. (2011). *Improving students' relationships with teachers to provide essential supports for learning*. Retrieved 05/10/17, from http://www.apa.org/education/k12/relationships.aspx.

Roffey, S. (2012). Pupil wellbeing—teacher wellbeing: Two sides of the same coin? *Educational and Child Psychology, 29*(4), 8-17.

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*(4), 493-529. Https://doi.org/10.3102/0034654311421793

Schechter, R. L., Kazakoff, E. R., Bundschuh, K., Prescott, J. E., & Macaruso, P. (2017). Exploring the impact of engaged teachers on implementation fidelity and reading skill gains in a blended learning reading program. *Reading Psychology, 38*(6), 553-579. Doi:10.1080/02702711.2017.1306602

Schneider, M., & Preckel, F. (2017). Variables associated with achievement in higher education: A systematic review of meta-analyses. *Psychological Bulletin, 143*(6), 565-600. Doi:10.1037/bul0000098

Sointu, E. T., Savolainen, H., Lappalainen, K., & Lambert, M. C. (2017). Longitudinal associations

of student-teacher relationships and behavioural and emotional strengths on academic achievement. *Educational Psychology, 37*(4), 457-467. Doi: 10.1080/01443410.2016.1165796

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher-student relationships. *Educational Psychology Review, 23*(4), 457-477. Https://doi.org/10.1007/s10648-011-9170-y

Steinmayr, R., Meißner, A., Weidinger, A.F., & Wirthwein, L. (2017). *Academic achievement*. Retrieved 31/10/17 from: http://www.oxfordbibliographies.com/view/document/obo-9780199756810/obo-9780199756810-0108.xml

Thapa, A., Cohen, J., Guffey, S., & Higgins-D'Alessandro, A. (2013). A review of school climate research. *Review of Educational Research, 83*(3), 357-385. Https://doi.org/10.3102/0034654313483907

The Brown Centre report On American Education (2014). *How well are American students learning?* Retrieved 20/09/2017 from: https://www.brookings.edu/wp-content/uploads/2016/06/2014-Brown-Center-Report_FINAL-4.pdf

The New Oxford Dictionary of English (2017). *Well-being*. Retrieved 28/09/2017 from https://en.oxforddictionaries.com/definition/well-being.

Valenta, R. L. (2010). *Effect of teacher engagement and teacher effectiveness on student achievement*, Retrieved 22/09/17 from http://search.ebscohost.com/login.aspx?Direct=true&db=psyh&AN=2011-99090-368&site=eds-live

Wong, V. W., Ruble, L. A., Yu, Y., & mcgrew, J. H. (2017). Too stressed to teach? Teaching quality, student engagement, and IEP outcomes. *Exceptional Children, 83*(4), 412-427. Doi:10.1177/0014402917690729.

Woolfolk, A. (2013). *Educational Psychology* (12th, New International Edition). London: Pearson.

Yoon, J.S. (2002). Teacher characteristics as predictors of teacher-student relationships: stress, negative affect, and self-efficacy. *Social Behavior and Personality: an international journal*, *30*(5), 485-493. DOI: https://doi.org/10.2224/sbp.2002.30.5.485