

Peer Group Influences on Learning Outcomes

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Abstract

The present study reviews the available literature concerning the ways in which peer groups (within and beyond the classroom) influence personal academic achievement for primary and secondary school students. Owing in part to the lack of literature identified, a focus is taken on contextualising the findings of the relevant studies within New Zealand educational practice guidelines. Total variation of peer group academic achievement, level of intrinsic reward gained from academic activities, cultural affiliation, group norms, peer acceptance and friend attachment are explored as possible mediating variables for the commonly observed causal (potentially non-linear) relationship between peer and personal academic performance. Suggestions for future research and suggestions for changing classroom practice including extra-curricular activities, reciprocal learning, collaborative reasoning and particularly fostering a community of learners are provided.

Keywords: *Peer Group, Academic Achievement, Primary, Secondary, Education, Aotearoa, New Zealand, Intrinsic Reward, Cultural Affiliation, Group Norms, Peer Acceptance, Friend Attachment*



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Introduction

Children and adolescents spend a great deal of their time associating with peers, both within and outside of formal educational settings (Johnson, 2000). These peer group interactions represent a key process through which young people are influenced, both directly by their peers and indirectly through peer norms, opinions and experiences of wider society (Biddulph, Biddulph & Biddulph, 2003; Bronfenbrenner & Morris, 2006). While schools' use of streaming or tracking, formal peer tutoring and co-operative learning strategies have prompted a great deal of research on peer effects within the classroom (Berndt, 2004; Levy-Tossman, Kaplan, & Assor, 2007; Wilkinson & Fung, 2002; see Hattie, 2009 for an overview), there is still limited research literature on the extent to which peer relationships in general, within and beyond the classroom, influence ākonga learning outcomes.

The present literature review addresses this topic, asking: What do we know about the ways in which wider peer groups influence individual achievement? And how can this information be used by beginning teachers in New Zealand to improve ākonga outcomes? The present work follows existing conventions, defining peer groups broadly as including friends, small cliques, as well as wider in-groups and out-groups (Wilkinson et al., 2000). In order to investigate the topic, a literature search was conducted using The University of Canterbury's multi-search function using the key words "peer", "effects OR influences" and "education". To avoid complications with composition effects and within classroom measurement (Nash, 2002), only studies that included measurements of broad peer groups were included. Studies not relating to primary,

secondary or early childhood education context were also excluded.

Review of Existing Literature

Now more than a decade old, the most recent best evidence synthesis available to New Zealand teachers that specifically addresses peer influences is the Ministry of Education's (2003) report titled *The Complexity of Community and Family Influences on Children's Achievement in New Zealand*, which provides a robust and relevant starting point for interrogating the literature (Biddulph et al., 2003). The report focused specifically on New Zealand schooling contexts, concluding that peer groups, within and beyond the classroom, can have a significant impact on ākonga achievement. The report suggests that in many cases peer groups are the direct source of ākonga learning, rather than parents or educators. The complexities of peer group influence are also highlighted: peer group influences frequently act in combination with other social influences, are often contextually and temporally dynamic, and now commonly involve advanced communication technologies such as social media (Biddulph et al., 2003). The basic underlying mechanism of action of peer influences endorsed by the Ministry of Education's (2003) report is that peer groups create norms that either role-model or discourage academic success and engagement (Wilkinson et al., 2000). While this norms based understanding is a compellingly simple, and undoubtedly important mechanism of action for peer influences on individual achievement, it is worth noting that causal mechanisms for peer effects are likely very complex and challenging to quantify (Nash, 2002).

More recent research has shown that ākongā tend to associate with peers who exhibit a level of academic achievement approximately equal to their own (Burack et al., 2013; Ding & Lehrer, 2007; Masland & Lease, 2013). While the breadth of evidence across time and settings suggests that this is a reliable finding, here one must be reminded of the old statistical mantra: correlation does not equal causation. While personal and peer achievement are highly positively correlated, there is a need to investigate the causal direction of this relationship, and in order to be able to use this knowledge fruitfully within a classroom setting, to interrogate the mechanisms underlying this correlation as well as possible moderating factors. The following literature review aims to address these questions to the extent that available published evidence allows, first by examining the issue of direction of causality (i.e. does having high achieving peers lead to improved academic performance, or does improved academic performance lead to associating with high achieving peers), then by examining the available evidence for potential mechanisms for this relationship.

A recent study conducted by Ding and Lehrer (2007) provides insights into the causality of the correlation between personal and peer achievement, as well as highlighting the complexities of this relationship in a large ($n = 1,300$) sample of Chinese secondary school students. Their research analyses historical academic achievement records, comparing earlier peer performance with current student performance.

While Ding and Lehrer's (2007) data was collected solely within the classroom and so could be considered unrepresentative of wider peer influences, they make specific mention to the fact that within the study population, learners within the schools of China's Jiangsu Province, peer groups are typically entirely comprised from classroom peers. In this way their data is considered to be representative of wider peer-groups. By using data from two time points Ding and Lehrer (2007) were able to examine the predictive value of peer achievement on personal achievement. Their findings suggest that peer performance leads to changes in personal performance. In other words, learners who have peers who achieve at a higher level than themselves are likely to improve their own academic performance to match that of their peers. Ding and Lehrer's (2007) results also suggest that the relationship between personal and peer group achievement is non-linear, i.e. for some levels of personal achievement, having peers who achieve higher than you is not likely to improve performance, as shown in figure 1.

Ding and Lehrer (2007) also found that increased variance in peer group achievement typically leads to a reduction in personal achievement. This is particularly interesting as it suggests that the more homogenous one's peer group, the more that individual's academic performance benefits. Conversely, it is detrimental to individual performance to have a diversely achieving peer group. This interesting finding certainly warrants further study, however, even if the finding was to be replicated in future research, the narrow outcome variable (individual academic achievement) does not necessarily override importance of other positive effects of having a diverse peer group.

While Ding and Lehrer's (2007) findings represent interesting and cutting-edge developments on our understanding of peer effects in relation to academic achievement, a number of limitations to their study must be considered. Their study is conducted using historical data (late 1990s) from within China's secondary education system in an affluent area of coastal mainland China. Given that the Chinese schooling system differs significantly from a western approach (Ding & Lehrer, 2007) and

the age of the data, it is not known how generalisable their results may be to other current contexts. Additionally, Ding and Lehrer's (2007), statistical modelling approach, although benefiting from a huge data set, potentially fails to capture the subtleties of peer relations which may be more valuably interrogated using qualitative and self report measure.

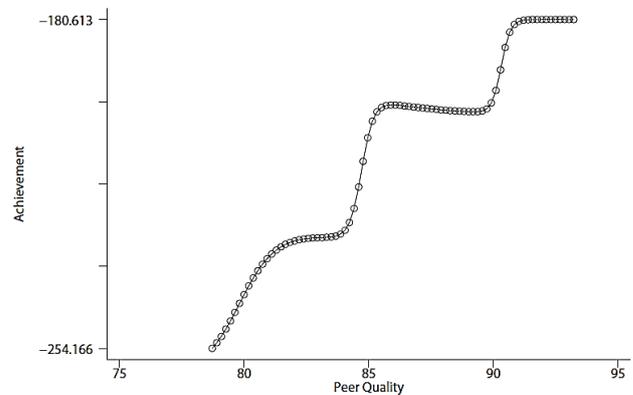


Figure 1. Modelling of peer quality (a measure of previous peer achievement) as it relates to achievement (a measure of current personal achievement). Reprinted from Ding and Lehrer (2007), p. 308.

Some evidence for a potential moderating effect on the relationship between personal and peer achievement is provided by Masland and Lease (2013) from their empirical self-report research with American middle school students. Along with supporting the general trend of peer achievement correlating predicting personal achievement, their findings suggested that the positive and negative effects of peer group academic norms are greater for ākongā who do not enjoy academic work, compared to ākongā who find academic work intrinsically rewarding. This interesting finding suggests that for ākongā who don't enjoy academic work, having high achieving peers can make a bigger difference.

Results from a small Canadian study provide some insight into possible mechanisms through which peers may influence academic performance (Burack et al., 2013). Participants in the study were youth of a first nations community ($n = 81$) in northern Québec. Using a combination of grades and self-report data, Burack et al. (2013) found peer acceptance (how much a learner is liked by others) and friend attachment, although uncorrelated to each other, both predicted academic achievement, positioning them as potentially important variables in the relationship between peer and personal achievement. Importantly, affiliation with white mainstream culture or native culture did not predict academic achievement in Burack et al.'s (2013) regression model, suggesting that peer influences act independently of cultural affiliation. While the scale of the study was small, its context within a remote first nations community gives it the unique advantage of being able to include nearly the whole community, rather than a specific segment. It is also relevant that first nations communities in Canada have many similarities to New Zealand Māori, in that both groups have experienced colonisation, forced assimilation, discrimination and at times, reduced educational resources (Burack et al., 2013; King, 2003). If Burack et al.'s (2013) results were to be replicated within a New Zealand context, they could reinforce peer influences as an important mechanism for supporting the academic achievement

of priority as well as other learners (Ministry of Education, 2007), given the cultural independence of the positive effects of peer influence.

Limitations and Future Research

While limitations of individual studies are discussed above, it is important to consider overall limitations of the available evidence. The search strategy in the present study revealed alarmingly few studies that considered the influences of wider peer groups, within and beyond the classroom. This absence of literature may relate to the difficulties involved in collecting and verifying data beyond the classroom, or may be a result of an insufficiently broad search strategy in the present review. In all the reviewed literature, academic achievement was used as the key outcome variable. While academic achievement is important, the holistic nature of the key competencies in the *New Zealand Curriculum* (Ministry of Education, 2007) warrants further research focused on peer influences examining a broader range of outcomes. Aside from [Burack et al.'s \(2013\)](#) work with first nation communities, the studies reviewed are of unknown generalisability to a New Zealand context. Future New Zealand studies examining peer effects within and beyond the classroom would be beneficial to the field in general and particularly for New Zealand educators. All the available literature used quantitative research methods to investigate peer effects, as [Nash \(2002\)](#) points out, a combination of qualitative and quantitative research methods likely provides the most effective approach to understanding wider peer influences. Again, more research using different approaches would be beneficial to the field, particularly in promoting the understanding of mechanisms underlying peer influences.

Supporting Outcomes for Ākongā

Given what we know about peer influences on personal achievement, how can educators, particularly beginning teachers, adjust their practices to achieve better ākongā outcomes? This section looks at ways knowledge of peer influences might affect teaching practice through extra-curricular activities, reciprocal learning, collaborative reasoning and by fostering a community of learners. Beyond the classroom, parents, communities, and importantly teachers can provide settings for healthy peer group interactions by providing the opportunity for constructive engagement in peer groups through settings such as dances, youth-groups, community organisations and sports clubs. All of which have been shown to enhance academic and other outcomes for ākongā ([Alton-Lee, 2003](#)).

Reciprocal learning ([Palinscar & Brown, 1984](#)), an instructional technique where ākongā take on the teacher's role during reading comprehension activities, has been recommended as a valuable strategy for maximising peer influences within the classroom ([Wilkinson et al., 2000](#)). It is proposed that reciprocal learning activities not only have a direct positive impact on ākongā achievement, but also promote and strengthen peer bonds within (and potentially beyond) the classroom ([Wilkinson et al., 2000](#)). [Ross and Cousins \(1995\)](#) stress the importance of the role of the teacher as facilitator during such activities, in order to ensure that all ākongā are given opportunities, and to avoid the reliance on fixed helper/helpee peer relations.

Collaborative reasoning, an instructional approach designed to enrich classroom discussion by utilising critical features of dialogue amongst peers, is also promoted as a way to promote

peer influences within the classroom ([Wilkinson et al., 2000](#)). Collaborative reasoning aims to enable greater ākongā self-directedness, by giving ākongā control of discussions. Collaborative reasoning, when implemented effectively provides teachers an opportunity to observe peer interactions without unduly influencing them, yielding greater teacher insight and understanding of peer influences.

While reciprocal learning and collaborative reasoning are both typically employed within linguistic subject areas such as English and the Social Sciences ([Wilkinson & Fung, 2002](#)), the broader approach of fostering a community of learners has been proposed as a more all-encompassing (both at the classroom and school level) approach to leveraging on positive peer influences ([Fraser & Hill, 2016](#); [Wilkinson et al., 2000](#)). A community of learners constructs the classroom as a grouping of people with shared beliefs and values who learn from each other. The approach relies on peer interactions to achieve learning goals, seeing knowledge as being generated within the activities the community engages in ([Wilkinson et al., 2000](#)). A community of learners incorporates the Māori concepts of ako and tuakana-teina in that ākongā learn from one another as well as from the teacher, while the teacher guides and monitors the learning process, they also participate both as a teacher and as a learner ([Berryman & Bishop, 2016](#)). Developing a community of learners aims to strengthen intellectual, social, and emotional connections within the classroom. Such an approach relies upon and aims to strengthen peer bonds within the classroom, so potentially raising the achievement of all learners in line with the predictive normalisation peer influence found by [Ding and Lehrer \(2007\)](#).

Importantly for extending partnerships for learning, fostering a community of learners also involves bringing events outside of the classroom into classroom dialogue through activities such as sharing circles ([Berryman & Bishop, 2016](#)), allowing teachers to leverage on peer success outside of the classroom. It is hypothesised that by acknowledging and engaging with peers beyond the classroom while strengthening peer bonds within the classroom, developing a community of learners maximises peer effects ([Wilkinson et al., 2000](#)). Though at present, this hypothesis is purely speculative, as while the efficacy of fostering a community of learners has been proven ([Sewell & St George, 2016](#)), its connection with peer influences within and beyond the classroom remain more speculative.

Conclusion

Research including peer influences beyond the classroom is still limited, probably owing to the difficulties involved in collecting and verifying data beyond the classroom environment. The available evidence suggests that the academic performance of wider peer groups tends to pull any given member of that peer group towards the group mean level of academic performance ([Burack et al., 2013](#); [Ding & Lehrer, 2007](#); [Masland & Lease, 2013](#)). This process is likely driven by individuals moving towards group norms ([Wilkinson et al., 2000](#)), but this may not operate linearly across all levels of achievement ([Ding & Lehrer, 2007](#)). Other mechanisms underlying the causal relationship between peer academic achievement and personal achievement are only beginning to be explored, however it appears that total variation of peer group academic achievement ([Ding & Lehrer, 2007](#)), level of intrinsic reward gained from academic activities ([Masland & Lease, 2013](#)), peer acceptance and friend attachment ([Burack et al., 2013](#)) are all possible mediating factors.

Particularly relevant to a New Zealand context, there is preliminary evidence to suggest that peer influences operate independently of cultural affiliations. Further research across different educational contexts, using broader outcome variables and particularly using qualitative methods is required to further our understanding of wider peer influences. Extra-curricular activities, reciprocal learning, collaborative reasoning and particularly fostering a community of learners have all been identified as practical ways for beginning teachers to leverage upon the positive effects of peer influences in their practice.

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