

# Interdisciplinary Team Teaching to Support Twenty-First Century Learning Skills

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## Abstract

There is a need to reimagine education in the New Zealand secondary school context that better supports twenty-first century learning skills. Interdisciplinary team teaching provides a model of change that could enable schools to reimagine how education is delivered, how knowledge is created, and better exemplify and incorporate learning skills relevant to a rapidly developing world. This article explores primarily qualitative data drawn from research addressing interdisciplinary team teaching (ITT) that spans across primary to tertiary settings in a range of contexts. The findings from this research express why it is necessary to reimagine current education systems, the benefits and barriers of ITT, and what enables the successful implementation of ITT. If a school is able to negotiate the barriers and understand what is necessary to make it work then research suggests that ITT can provide a structural, pedagogical, and philosophical change that will enhance learning skills necessary for the twenty-first century world.

**Keywords:** *Interdisciplinary, Team Teaching, Collaboration, Ākonga, Kaiako, Risk Taking, Critical Thinking, Innovation.*



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## Introduction

There is a push in New Zealand to critically reflect upon and reimagine the education system to more appropriately meet the demands of the twenty-first century (Hood, 2015). The purpose of this critical literature review is to assess whether interdisciplinary team-teaching (ITT), in a New Zealand secondary school context, provides an approach that can better support ākonga to learn the skills necessary for life in the twenty-first century. Team teaching can be defined as involving “a group of instructors working purposefully, regularly, and cooperatively to help a group of students learn” (Buckley, 2000, p.4). Interdisciplinary teaching commonly is the combination of two or more subjects to explore a thematic unit ([Barton & Smith, 2000](#)).

There is limited literature and research on this topic from a New Zealand context, therefore, this review draws on literature primarily from the United States with supplementary literature from Japan, Taiwan and New Zealand which spans from 1998 to 2016. The literature chosen also focuses on ITT in three education sectors; primary, secondary and tertiary, as research specifically related to the New Zealand secondary school context is limited. To look at the relevance of ITT in a New Zealand secondary school context this review will examine the four major themes that emerged from the literature:

- The importance of ITT pedagogy in twenty-first century education;

- The benefits of ITT pedagogy for both ākonga (learner) and kaiako (teacher);
- The barriers that hinder implementation of IIT; and
- Those pre-requisites and kaiako dispositions to support ITT.

## Why Interdisciplinary Team-teaching?

Education authors such as Sir Ken Robinson (2015), New Zealand’s David Hood (2015) and Richard Wells (2016), argue that current education systems are outdated as the ‘factory model’ they were based upon is no longer relevant in the twenty-first century. To bring about necessary change requires a philosophical shift in how we perceive knowledge, the roles of kaiako and ākonga, and what is relevant for our current and future world. Cathy Wiley (2011), posited that due to political pressure to raise student achievement, coupled with the decline in public spending on schools, means that New Zealand schools need to make greater use of their internal strengths. She concluded, through analysing data from the 2009 and 2010 NZCER primary and secondary teacher surveys, that this could be done through developing collaborative practices, which she suggests is essential for meeting the learning demands of a rapidly changing world, which will challenge the traditional approach to education.

Reimagining contemporary education means it is essential to promote learning in the areas of communication, cooperation, collaboration, risk taking, critical and reflective thinking, creativity, innovation, compassion, curiosity, and perseverance

(Hood, 2015; Wells, 2016; Wylie, 2011). To achieve this ākongā and kaiako need to identify as learners who have an active role in creating and applying knowledge. Kaiako can model this through ITT which involves collaborative teaching that enables classrooms to function as a team. In this environment ākongā and kaiako work together to develop subject skills, to understand how knowledge(s) emerge and function, and provide multiple perspectives. Ākongā are then able to develop frames of reference that enable application and contextualisation (Anderson & Speck, 1998; Murata, 2002; Harris, Harrison & McFahn, 2012). ITT is an approach that can promote collaborative practices, capitalise on internal strengths and enable the shift to an education system that better meets the demands of the twenty-first century.

## What are the Benefits?

### *Multiple Perspectives*

Anderson and Speck (1998) and Perry and Stewart (2005) concluded that multiple perspectives is a significant benefit of ITT. Ākongā gain multiple perspectives as two teachers provide different points of view. However, this can be undermined if a teaching team is experiencing tension and conflict. Ideally being presented with multiple perspectives causes ākongā to learn how to respectfully engage with other points of view without hostility, when kaiako model this in the classroom it can lead to open dialogue and greater ākongā participation (Anderson & Speck, 1998). Multiple perspectives can be gained on issues, concepts, processes, opinion, beliefs, values, and sources of information – all of which can be further enhanced when subjects disciplines are combined (Anderson & Speck, 1998; Perry & Stewart, 2005). This then helps develop interpersonal skills that are necessary for life in and outside of school.

### *Deeper Learning*

Oitzinger and Kallgren (2004) noted that research from the 1980's and 1990's showed that cognitive growth, such as critical thinking, developed better in an interdisciplinary setting than through studying separate subjects. ITT also helps shift kaiako focus toward a conceptual curriculum, which helps break down artificial barriers between subjects that do not exist in life outside of school (Murata, 2002). Conceptual teaching is an integral part of the current *New Zealand Curriculum* (Ministry of Education, 2007) and Wiley (2011) found that schools with higher collaborative practices were better able to unpack the complexities of the *New Zealand Curriculum* which includes the shift toward conceptual teaching.

### *Risk Taking and Richer Material*

The department of teacher education at Brigham Young University (USA), compared solo student teacher placements with team student teacher placements in the context of primary schools. The study highlighted that although there were some 'tradeoffs' to team-teaching, there were more benefits for all involved. One benefit that was highlighted was that student teacher teams felt that the support from their partner encouraged them to take risks (Bullough et al., 2003). A different study of a USA high school also showed that kaiako felt teaming provided a safe environment to develop and implement new ideas (Murata, 2002). A University interdisciplinary teaching team also noted that team teaching gave them the courage necessary for teaching a topic that neither individually felt confident delivering alone (Shibley, 2006). In the study at Brigham Young University, researchers identified the second benefit of training student

teachers in a team was that it enabled teacher teams to develop a richer, more varied and creative curriculum (Bullough, et al., 2003). In another case study approach, Perry and Stewart (2005) identified similar themes, and went on to argue that good communication enables richer creativity and deeper insight of kaiako.

### *Student Assessment Results*

Research explored in this review provides qualitative data, such as data drawn from case studies, the limitation of this is that it does not provide a source of quantitative data to support the argument that ITT does benefit ākongā. Only one article provided qualitative data that also showed student assessment results had improved as a result of team teaching. Gathering student voice through a questionnaire showed that over 50% of ākongā who were team taught thought that team teaching positively impacted their results (Jang, 2006). Future research that provides qualitative data on the correlation between ITT and NCEA results would be helpful for the New Zealand context.

### *Professional Development and Community*

Anderson and Speck (1998) concluded that kaiako find they learn more about themselves, such as their weaknesses and strengths, as a result of working together. Kaiako report learning from each other's differences, being able to bounce ideas off one another, and reflecting together, which results in a greater response to problems faced (Anderson & Speck, 1998; Murata, 2002; Perry & Stewart, 2005). Wiley (2011) found that collaborative practices were more likely to be effective for professional development than attending a workshop. She compared secondary kaiako collaborating through implementing *Te Kotahitanga* (Bishop & Berryman, 2009) to primary kaiako who undertook professional development for Māori achievement and found that secondary kaiako were more likely to say they had changed their thinking or improved their practice. ITT also lessens teachers' experience of isolation by creating a supportive nurturing community which leads to a higher teacher moral (Murata, 2002; Wylie, 2011). This creates a shift away from individualism that Bullough et al. (2003) suggested, if not done, significantly stands in the way of education renewal.

## What are the Barriers?

### *Control and Micro Politics*

Despite the many benefits of ITT, Gunn and King (2003) and Perry and Stewart (2005) posited that there are significant barriers that can have a negative impact on ākongā, kaiako and kura. Gunn and King (2003) provided an analysis of their experience of ITT. They acknowledged that team teaching can lead to effective educational results, however, they found that their experiences of issues of control and micro politics overwhelmed the outcomes. They reported a cyclical experience where lack of shared vision exasperated political conflict and political conflict prevented them from developing shared understanding.

### *Inadequate Leadership*

Murata (2002) and Wylie (2011) suggested that the support of school leadership will help foster and develop ITT. However, despite reporting that school leadership supported democratic ideology, Gunn and King (2003) found that the leadership of the department, in practice, did not. They described two styles of leadership that led to issues, which hindered collaborative practice; top down authoritarian leadership and laissez-faire

leadership. The outcome of the first was a lack of open communication where kaiako felt it was unsafe to express issues they were facing in the classroom, or the issues they were experiencing in the team, as they perceived that this would be seen as challenging the leader's authority. The outcome of the second style led to a sense of freedom which included freedom from working collaboratively. [Gunn and King \(2003\)](#) in reflecting upon their experience likened it to changing a car tyre while driving down the road. It is difficult to imagine, create and implement change when in momentum. This was further hindered as department leadership were only familiar with centralised and hierarchical power that they struggled to conceptualise what ITT could look like.

#### *Team Tension*

[Perry and Stewart \(2005\)](#), who have been involved in team teaching for 25 years, carried out research through interviewing fourteen team teachers over a two-year period. They also found that problems in teaching teams can make the experience ineffective very quickly. One teacher interviewed described feeling like he was in a fishbowl, noting that students readily pick up on the tensions in a teaching team relationship. Another teacher pointed out that the positive outcomes of team teaching can be quickly undermined if team teachers are incompatible ([Perry & Stewart, 2005](#)). This affirms the notion that it is important for teachers to have choice and that it is vital to resolve conflict.

#### *Time and School Systems*

[Gunn and King \(2003\)](#) and [Sandholtz \(2000\)](#) state another significant barrier is lack of time and timetabling issues. This often affects teams at the planning and evaluation stages of ITT, for example [Murata \(2002\)](#), [Shibley \(2006\)](#) and [Sandholtz \(2000\)](#) concluded that teachers face timetable clashes that make it difficult to find time to plan or reflect upon and evaluate lessons. Therefore, if it is difficult to meet to plan and evaluate, then making time to deal with conflict resolution would also be difficult. Many New Zealand secondary schools would have to reassess current structures that do not allow for the flexibility ITT requires.

## **How to make it work**

#### *Philosophy*

[Shibley \(2006\)](#), [Murata \(2002\)](#), [Gunn and King \(2003\)](#), and [Perry and Stewart \(2005\)](#) agreed that it is vital to have a shared philosophy about teaching and learning for collaboration to succeed. A lack of philosophical consensus was highlighted by [Shibley \(2006\)](#), who explained that the failure of one team was due to philosophical differences that could not be resolved, despite having the time to do so. These authors also stressed that philosophy is the most complex element of implementing ITT and that it is essential to explore philosophy for ITT to be effective. [Murata \(2002\)](#) highlighted that if members agree on beliefs about their roles and attitudes towards teaching then it leads to an openness on matters of pedagogy, curriculum and assessment. This is not to say that there is no place for difference in ITT, because if fundamental beliefs can be agreed upon it creates a freedom for teachers to utilise difference in things like teaching style.

#### *Team Choice*

[Bullough et al. \(2003\)](#) studied student teachers who were paired in teams while on placement. The university chose who students were paired with, the student teachers did not have any input in this. Student teachers reported that it was difficult at first to work with someone they would not necessarily have chosen to work with, but over time they grew in trust and respect for one another, learnt how to work in-sync, and learnt from each other's differences. In comparison, [Sandholtz \(2002\)](#) also studied team teaching during teacher training and concluded that personality conflicts are minimised when people are able to choose team partners. She also suggested that getting to choose the team meant that the relationship will begin on a stronger foundation. [Anderson and Speck \(1998\)](#), [Murata \(2002\)](#) and [Perry and Stewart \(2005\)](#) also explained that when people are able to choose their teaching team and there is a good level of compatibility, especially on philosophy, then teaching teams are generally more likely to be successful.

#### *Planning*

Effective planning is another element necessary for successful outcomes. It is important to collaboratively plan lesson objectives, leadership of teaching within the lesson and lesson conclusions. It is also important to plan and agree upon assessments so that expectations are clearly communicated to ākonga to avoid unnecessary confusion ([Murata, 2002](#); [Shibley, 2006](#)). Finally, [Sandholtz \(2000\)](#) concluded that planning curriculum development collaboratively has many benefits for a team, such as enabling the collaborative experience to go deeper than just assigning teaching tasks. She argued that it promotes experimentation and utilises the strengths and experiences of team members ([Sandholtz, 2000](#)). This then leads to benefits such as risk-taking, creativity and deeper learning.

#### *Kaiako Dispositions*

There are several kaiako dispositions that can lead to ITT success. [Gunn and King \(2003\)](#) analysed their experience of ITT and concluded that it is important to be reflective upon one's practice. [Shibley \(2006\)](#) and [Perry and Stewart \(2005\)](#) who looked at case study data both agreed that kaiako need to be prepared to deal with conflict, which involves open and honest communication when there is a problem. Otherwise, if conflict is avoided then it can have a direct impact on ākonga. [Sandholtz \(2000\)](#), [Shibley \(2006\)](#) and Roth and Tobin (2005) argued that collective responsibility is an integral disposition of kaiako. This involves seeing team members as equals and working collaboratively, especially in the areas of planning, instruction, and evaluation. Roth and Tobin (2005) reported their experiences of team teaching and reasoned that when teachers view each other as equals and take collective responsibility they are more comfortable to step in while the other is teaching to clarify or add value to what is being taught. They do not wait until after to discuss what could have been if they think there was something that would have improved the learning experience for ākonga.

## **Conclusion**

This literature review has examined the many benefits of ITT, a good amount of which are very applicable to learning in the twenty first century. These include: interpersonal skills, such as relating to each other, respectfully engaging with issues of difference, and learning to see things from multiple perspectives. Discussion and analysis of the literature has also explored the

development of a deeper conceptual curriculum that makes connections across subjects, and encourages risk taking and creativity. Therefore, if teaching teams are able to minimise or work through barriers like micro-politics, team tension and time restraints, then this is an approach to New Zealand secondary school education that would enhance as opposed to hinder learning in the twenty-first century. To enable ITT to flourish kaiako need a shared vision and philosophy, teacher choice in team configuration, time to effectively plan and dispositions such as collective responsibility, having a holistic view of learning, and being invested in the success of ITT for all involved.

<http://www.nzcer.org.nz/system/files/opportunities-for-teacher-collaborative-practices.pdf>

## References

- [1] Anderson, R. S., & Speck, B. W. (1998). "Oh what a difference a team makes": why team teaching makes a difference. *Teaching and Teacher Education*, 14(7), 671-686. doi: [http://dx.doi.org/10.1016/S0742-051X\(98\)00021-3](http://dx.doi.org/10.1016/S0742-051X(98)00021-3)
- [2] Barton, K. C., & Smith, L. A. (2000). Themes or motifs? Aiming for coherence through interdisciplinary outlines. *The Reading Teacher*, 54(1), 54-63. Retrieved from <http://www.jstor.org/stable/20204877>
- [3] Bishop, R. & Berryman, M. (2009). The Te Kotahitanga effective teaching profile. *Set: Research Information for Teachers*, 2, 27-33. Retrieved from [http://www.nzcer.org.nz/system/files/set2009\\_2\\_027.pdf](http://www.nzcer.org.nz/system/files/set2009_2_027.pdf)
- [4] Buckley, F. J. (2000). *Team teaching: what, why and how*. Thousand Oaks: Sage Publishing.
- [5] Bullough, R., Young, J., Birrell, J., Clark, C., Egan, W., Erickson, L., Frankovich, M., Brunetti, J., & Welling, M. (2003). Teaching with a peer: a comparison of two models of student teaching. *Teacher and Teacher Education*, 19(1), 57-73. doi: [http://dx.doi.org/10.1016/S0742-051X\(02\)00094-X](http://dx.doi.org/10.1016/S0742-051X(02)00094-X)
- [6] Gunn, J., & King, B. (2003). Trouble in paradise: Power, conflict, and community in interdisciplinary team teaching. *Urban Education*, 38(2), 173-195. doi: <http://dx.doi.org/10.1177/0042085902250466>
- [7] Harris, R., Harrison, S., & McFahn, R. (2012). *Cross-curricular teaching and learning in the secondary school: Humanities*. Oxon: Routledge.
- [8] Hood, D. (2015). *Rhetoric and the reality: New Zealand schools and schooling in the 21st century*. Wairarapa: Fraser Books.
- [9] Jang, S.-J. (2006). Research on the effects of team teaching upon two secondary school teachers. *Educational Research*, 48(2), 177-194. doi: <http://dx.doi.org/10.1080/00131880600732272>
- [10] Murata, R. (2002). What does team teaching mean? a case study of interdisciplinary teaming. *The Journal of Educational Research*, 96(2), 67-77. doi: <http://dx.doi.org/10.1080/00220670209598794>
- [11] Oitzinger, J., & Kallgren, D. (2004). Integrating modern times through student team presentations: a case study on interdisciplinary team teaching and learning. *College Teaching*, 52(2), 64-68. Retrieved from <http://www.jstor.org/stable/27559181>
- [12] Perry, B., & Stewart, T. (2005). Insights into effective partnership in interdisciplinary team teaching. *System*, 33(4), 563-573. doi: <http://dx.doi.org/10.1016/j.system.2005.01.006>
- [13] Roth, W.-M., & Tobin, K. (2005). *Teaching Together, Learning Together*. New York: Peter Lang.
- [14] Sandholtz, J. H. (2000). Interdisciplinary team teaching as a form of professional development. *Teacher Education Quarterly*, 27(3), 39-54. Retrieved from <http://www.jstor.org/stable/23478234>
- [15] Shibley, I. A. (2006). Interdisciplinary team teaching: negotiating pedagogical differences. *College Teaching*, 54(3), 271-274. doi: <http://dx.doi.org/10.3200/CTCH.54.3.271-274>
- [16] Wells, R. (2016). *A Learner's paradise: how New Zealand is reimagining education*. EdTechTeam Press.
- [17] Wylie, C. (2011). *Opportunities for teacher collaborative practices in a self-managed school system: The New Zealand experience*. Paper presented at the American Educational Research Association 2011 Annual Meeting, New Orleans, LA. Retrieved from