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Education Research Journal

IELA

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A key priority of the Professional Teachers' Council NSW Strategic Plan and vision for Education in NSW is to enhance the teaching profession through the generation of increased respect for classroom teachers in the general community. This includes raising the personal and professional esteem of classroom teachers through recognition and the rewarding of excellence.

It is our firm belief that classroom teachers are, and should be recognised as, leaders in educational discourse. Consequently, the Directors of the Professional Teachers' Council NSW are excited to announce the foundation of the Institute for Educational Leadership in Australia (IELA) which will foster, recognise and reward excellence in classroom practice.

The Professional Teachers Council, IELA Annual Awards.

The Professional Teachers Council NSW Annual Awards recognise the outstanding contribution teachers undertake through their professional teaching associations. Contributions that are voluntary, requiring significant commitment of time supporting the many members of individual associations. These PTC NSW member awards provide a valuable and highly recognised celebration of the significant role professional teacher associations fill in NSW education and the individuals that make it all happen.

All PTC NSW member associations are encouraged to annually acknowledge the significant commitment of associations and publicly thank the individuals for their often 'unsung' invaluable commitment!

Award categories include, the prestigious Outstanding Professional Service Awards (OPSA) as an acknowledgment of excellence in the profession: The Outstanding Beginning Teacher Award (OBTA) recognises the outstanding professional contribution by an individual committee member (of a Professional Teachers' Association) with five or less years teaching experience in education in NSW: Association Service Award recognising the valuable contribution of paid staff of an association.

In addition, the work of an individual PTC NSW member association can be recognised via the highly prestigious and coveted Association of the Year Award, presented by the NSW Minister of Education. All PTC NSW member associations are encouraged to apply for this significant award.

These important annual awards publicly acknowledge and value the outstanding professional contribution to education made by teachers through the network of Professional Teaching Associations across all sectors and systems of NSW.

For **nomination** forms and award criteria please **CLICK HERE**

Looking forward to seeing you at the next presentation evening 28 February 2024, celebrating 50 Years of PTC NSW association support!

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About the Teachers Guild of NSW Research Award

The "Guild Research Award" is offered to a Postgraduate Student and/or Experienced teacher in NSW or ACT school, who is currently completing or completed research of direct benefit to classroom teaching within the last two years.

The Professional Teachers Council NSW is proud to offer the annual winner of this important award publication in our Education Research Journal, ERJ. Our inaugural recipient is Mariel Lombard.

Nominations for this year's Guild Research Award close Friday, 23 June 2023

FEATURE – GUILD RESEACH AWARD 2022

COMPASSION FATIGUE AMONG SECONDARY SCHOOL YEAR COORDINATORS

Mariel Lombard

ABSTRACT

The study of compassion fatigue in the education sector is an emerging area of research. One particular group of educators who may be at heightened risk of compassion fatigue are Year Coordinators: a role within Australian secondary schools responsible for overseeing the wellbeing of students, and one that educators take on concurrent with classroom teaching. The purpose of this research, the first large-scale study of its kind in Australia, was to examine the prevalence and extent of compassion fatigue among Australian secondary school Year Coordinators. Participants included 228 Year Coordinators (and educators in similar roles) across Australia and across all three main school sectors: Government, Independent, and Catholic Systemic. The study employed the use of an online questionnaire, inclusive of a measure of the prevalence of compassion fatigue: the Secondary Traumatic Stress Scale (STSS; Bride et al., 2004). Findings suggest that compassion fatigue is a significant occupational hazard for Year Coordinators and one that warrants further investigation. With greater awareness of the existence and extent of compassion fatigue, schools may be better able to identify staff at risk and take measures to protect them from the deleterious effects of supporting students with high levels of need.

Author note: This article reports preliminary findings from a study conducted for the Doctor of Philosophy at Western Sydney University with Assoc. Prof. Jacqueline Ullman, Assoc. Prof. Tania Ferfolja, and Assoc. Prof. Nida Denson (Supervisors).

The study of compassion fatigue in education is an emerging area of research, and one drawing increasing interest in Australia as youth mental health and teacher wellbeing decline (Australian College of Educators, 2021; Australian institute of Health and Welfare, 2021; Brennan et al., 2021). Compassion fatigue is a psychological condition characterised by physical, emotional and psychological exhaustion. It has been referred to as the 'cost of caring' for those who work in caregiving industries and who support others in emotional pain (Figley, 1995, p.9). Whilst slower to emerge in the education sector as compared to other professions, studies into compassion fatigue amongst educators have seen a gradual increase in the past ten years (Borntrager et al., 2012, Caringi et al., 2015; Koenig et al., 2018, Pérez-Chacón et al., 2021). In 2019, leading researchers in the area of compassion fatigue (CF) and secondary traumatic stress (STS; a term used interchangeably with CF), asserted that research addressing the psychological condition of compassion fatigue amongst educators was an 'immediate priority' (Lawson et al., 2019, p.427). In particular, researchers have drawn attention to the impact that compassion fatigue may have on educators as a result of their work supporting and listening to students' stories of trauma and/or psychological distress. These impacts on educators include disengagement, depression, sleep disturbances and workforce turnover (Lawson et al., 2019). International quantitative research in school environments in which students and teachers are likely to have been exposed to significant trauma or distress has identified rates of compassion

fatigue comparable to those seen in mental health professions (Borntrager et al., 2012; Pérez-Chacón et al., 2021). One study by Borntrager et al. (2012), for instance, reported that amongst a sample of 229 public school personnel in the Northwestern United States, 75% met all three core diagnostic criteria for secondary traumatic stress, as measured on the Secondary Traumatic Stress Scale (STSS). More recently, research in Spanish speaking countries and countries with a strong Spanish influence during the COVID-19 confinement found that teachers experienced higher rates of compassion fatigue than their counterparts in healthcare professions (Pérez-Chacón et al., 2021). The researchers reported that compassion fatigue was an 'emerging psychosocial risk in education' (p.1), and one that was likely to have been exacerbated by the COVID-19 pandemic.

In Australia, a recent series of qualitative studies found that teachers report feelings of emotional exhaustion and emotional pain, as well as feelings of detachment, depersonalisation, loss of hope, and disengagement from students as a result of exposure to students' trauma (Berger, Bearsley & Lever, 2020; Berger & Samuel, 2020; Berger, Martin & Phal, 2020). Uncovered in each of these qualitative studies are common themes related to a lack of trauma-specific training amongst staff; varying levels of support from colleagues, supervisors and external services; and lack of trauma-oriented policies in schools (Berger, Bearsley & Lever, 2020; Berger & Samuel, 2020; Berger, Martin & Phal, 2020). Subsequent recommendations have included access to further teacher training, teacher debriefings, staff consultation and greater access to support following exposure to students' trauma (Berger, Bearsley & Lever, 2020; Berger & Samuel).

Recent research from the Black Dog Institute (O'Dea et al., 2021) reports that the role of the Year Coordinator in Australia can be likened to that of a 'case manager' responsible for 'triaging students' problems and diffusing mental health related crises' (p.9). The study asserts that the role of the Year Coordinator in reactive work has intensified in recent years and that educators in these roles are becoming increasingly responsible for responding to 'multiple and complex student issues' (O'Dea et al., 2021, p.9). This intensification of the role has been reflected in decreases in children's overall wellbeing nationwide and increases in mental health concerns amongst young people (Australian Institute of Health and Welfare, 2021; Brennan et al., 2021; Werner-Seidler et al., 2022). Data from the Australian Institute of Health and Welfare (AIHW, 2021b), for instance, reports that between 2015-16 and 2019-20, there was a 37% national increase in child protection notifications. Whilst this may reflect growing awareness of child protection processes and legislative changes in Australia, it is also likely to indicate an increase in cases of abuse and neglect (AIHW, 2021b). Concerns about the rates of youth mental ill health have also been reflected in data from Mission Australia's Youth Survey of over 25,800 young people in 2020, which found that over one quarter (26.6%) of young people between the ages of 15-19 years were reporting psychological distress (Brennan et al. 2021). This figure had increased by 8% in an 8-year period, from a rate of 18.6% in 2012. As a result of the increase in distress amongst school-aged students, wait times for primary care providers such as paediatricians, psychiatrists and psychologists have increased, with young people waiting an average of over one month for initial mental health appointments (Mulraney et al., 2020). Consequently, school staff, and particularly Year Coordinators who are on the front line of student support, are being expected to take on increasing responsibility for supporting students in psychological distress (O'Dea et al., 2021).

Impacts of the COVID-19 pandemic

The role of the Year Coordinator in Australian secondary schools is likely to have intensified in recent years as a result of the Coronavirus (COVID-19) pandemic which reached Australia in January 2020, in the immediate aftermath of some of the worst bushfires on record in 2019. Whilst the rates of positive cases, hospitalisation and death in Australia linked to the pandemic have been considerably lower than in other parts of the world, there have been significant social and economic impacts. This has included increased economic hardship, stress on relationships and families, strains on the health care system, and increases in rates of psychological distress and consequent demand for mental health services (Australian Institute of Health and Welfare, 2022; Bessell, 2021). Children and young people have been particularly impacted by government measures introduced to slow down the transmission

of COVID-19. Measures such as lockdowns, school closures and physical distancing have had a significant impact on young people's social connectedness, and their sense of certainty and security (Bessell, 2021). This is particularly significant for secondary school aged students, for whom social connections and peer relationships play an important role in their sense of self (Australian Institute of Health and Welfare, 2021c).

National data on the state of youth mental health currently includes only pre-pandemic rates, with large-scale studies having been conducted prior to or in early 2020. Early research, however, suggests that adolescents' mental health has been significantly impacted by the pandemic and the associated government restrictions (Australian institute of Health and Welfare, 2021; Brennan et al., 2021; Magson et al., 2021). The mental health impacts of the pandemic are likely to be long-term, with some researchers suggesting that whilst the initial impact on mental health rates has been severe, 'worse may be coming' (McGorry, 2020). The 2021 Mission Australia Youth Survey (Tiller et al., 2021) reports that more than 50% of young people have identified their mental health as being negatively impacted by the pandemic. Global data from the World Health Organisation (WHO, 2022) further reports that prevalence rates of anxiety and depression amongst the general population during the first year of the pandemic increased by 25%.

Research based on prior instances of quarantine-use (e.g., as a result of exposure to SARS, Ebola or the H1N1 influenza) has reported that quarantines can have lasting negative psychological impacts including post-traumatic stress symptoms, emotional disturbances, low mood, anxiety and depression (Brooks et al., 2020). Studies have also shown that COVID-19 may contribute to long-lasting emotional trauma related to adverse experiences that have been exacerbated during the pandemic. This includes isolation and loneliness, educational disruption, domestic violence, housing stress and unemployment (Australian institute of Health and Welfare, 2021a; Higgins, 2020). What has become apparent is that the social and economic impacts of the COVID-19 pandemic will have repercussions in schools across the country. Ultimately this means that educators will face greater demand to meet the social, emotional, and academic needs of students, whilst also managing their own wellbeing (Brunzell et al., 2021; Darling-Hammond & Hyler, 2020; Howard et al., 2022).

The state of teacher wellbeing

Research has also shown that the wellbeing of Australian teachers is at an all-time low, exacerbated by additional stressors brought on by the COVID 19 pandemic (ACE, 2021; Brunzell et al., 2021). This has included expectations to make up for lost learning; adapt to 'distance learning, blended learning and in-class learning', and manage teacher shortages (Darling-Hammond & Hyler, 2020). The Australian College of Educators (ACE, 2021) reports that the rate of job satisfaction amongst Australian teachers dropped from 91% in 2017 to 63% in 2021. The same report indicates that in mid-2021, four in five teachers were reporting that their work-life balance was either 'less than ideal' or 'non-existent'. The concerning state of staff wellbeing appears to be particularly acute in Australia as compared to other OECD countries. Data from the OECD's Teaching and Learning International Survey (TALIS; Thomson and Hillman, 2020) indicates that almost three quarters (74%) of Australian teachers are reporting negative impacts of their work on their mental health, compared to the OECD average of 66%. According to the TALIS, on average, Australian teachers are working five more hours per week than compared with the average for TALIS countries (Freeman et al., 2014, p. 3). Averages are even higher for the Australian cohort of secondary school teachers, where the reported average teacher workload is 47.6 hours per week (McKenzie et al., 2014). Research has also found that teachers report higher levels of psychological distress and work-related stress as compared to other professionals (Stapleton et al., 2020). One study found that rates of depressive symptoms amongst Australian teachers were as high as 18% for the moderately severe to severe range, and rates of anxiety up to 20% for severe anxiety (Stapleton et al., 2020). The increasing strain faced by Australian teachers suggests that they are at high risk of developing symptoms of burnout, psychological distress and/or compassion fatigue (Chan, 1998). This is significant given research which has indicated that teachers' psychological wellbeing can impact on their ability and willingness to engage with their students'

mental health problems (Kidger et al., 2010; Sisask et al., 2014). Studies have shown that compassion fatigue symptoms may lead teachers to be less patient, frustrated, less focused and show less compassion (Fowler, 2015). Thus, if teachers' mental health is neglected, their ability to support and respond to students in need is jeopardised (Kidger et al., 2010).

Although research is emerging in Australia on the impacts of secondary trauma on educators, to date, no large-scale, national quantitative inquiry has explored the prevalence and severity of compassion fatigue (or related constructs) amongst Australian secondary school educators. Given the body of literature which has identified significant personal and professional impacts of secondary trauma on educators, further research is needed to understand the full extent of this impact within the Australian sector, in particular, amongst educator groups who have a higher level of exposure to student trauma and distress. The current study attempts to fill this gap in the literature by using the framework of compassion fatigue to better understand the extent to which secondary Year Coordinators, as teachers with specific student wellbeing responsibilities, may be impacted by their work with young people in psychological distress.

Method

The study used a cross-sectional design, employing the use of a national online questionnaire. The purpose of the questionnaire was to assess the prevalence of compassion fatigue amongst Australian Year Coordinators. A cross-sectional design is commonly used when measuring prevalence as it captures an observation of a population at a particular point in time and provides an estimate of the burden of an illness or condition (Pandis, 2014). The study was approved by the Western Sydney University (WSU) Human Research Ethics Committee (H14897).

Participants

The study was comprised of 228 secondary school teachers employed in the role of Year Coordinator or similar (e.g., Head of Year, Head of House, Year Advisor) working across Australia's three schooling sectors (government/public; independent/private; Catholic). The term 'Year Coordinator' in this context is used to refer to a secondary school role in which a staff member is responsible for overseeing the wellbeing of a cohort of students. This included 188 teachers responsible for a single year group or House group, and 40 teachers with student wellbeing leadership responsibilities. The latter included roles such as Head Teacher Wellbeing, Pastoral Care Coordinator, Head of Student Support and Head of Middle School. These roles were included in the data analysis given the diverse nature of school structures and the range of school sizes included in the study, which could mean that a Head of Middle School in one school could oversee the same number of students as a Head of House[1] in another. These roles were included in the data analysis with the provision that participants straddled both teaching responsibilities and wellbeing responsibilities for a general cohort of students.

Recruitment

Recruitment employed both targeted and snowball sampling methods. Participants were recruited through word of mouth using the researcher's professional networks, as well as through paid social media advertising on Facebook, Instagram and LinkedIn. Paid advertising used the target audience feature for both Meta (Facebook/ Instagram) and LinkedIn, which allowed for the advertisement to specifically target users who resided in Australia, were over the age of 21, and matched one or more specific criteria. These criteria included interests in education-related topics, job titles relating to teaching, and studies in the field of education.

Procedure

Upon approval from the ethics committee, the advertising material was distributed online and the researcher shared the link amongst their professional networks. Interested participants were directed to the online questionnaire to complete in their own time. A Participant Information Sheet and

1   Heads of Houses are responsible for student wellbeing in schools with a vertical pastoral care system.
     The house structure typically groups students from multiple year groups to provide mixed-age collaboration.

Consent Form were embedded prior to the start of the questionnaire. This outlined the voluntary and anonymous nature of the questionnaire as well as the participants' right to withdraw from the study at any time without affecting the relationship with the researcher and/or the university. A contact email for the researcher was provided if participants wanted to discuss the purpose of the study further. The questionnaire was available over a 3-month period, between mid-June and late-September 2022.

Instrumentation

Demographic questionnaire

The demographic questionnaire assessed personal, professional and school characteristics. Personal demographics included age, gender, caring responsibilities (young children and/ or elderly parents) and marital status. Professional characteristics included role title, number of students for whom the participant was responsible, years of experience in the role of Year Coordinator (or equivalent role title) and years of experience as an educator. Participants were also asked to provide an estimate of the number of hours per week spent supporting students presenting with mental health distress, as well as their FTE (Full-Time Equivalent) load allocation for wellbeing and teaching responsibilities, in order to gauge what proportion of their working week was spent attending to student wellbeing. School characteristics included the school sector, size of the secondary school, and gender of students.

Secondary Traumatic Stress Scale

The Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) is a 17-item instrument which measures the frequency of three domains associated with secondary traumatic stress: intrusion, avoidance, and arousal. Intrusion refers to the presence of intrusive thoughts such as recollections, flashbacks or dreams of a traumatic incident. Avoidance indicates an attempt to avoid thoughts, emotions, people or places which may trigger distressing memories; whilst arousal refers to a change in feelings and emotions such as feeling irritable, guilty or self-destructive. These domains were developed so that the STSS was congruent with the symptoms of Post-Traumatic Stress Disorder (PTSD) listed in the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders; American Psychiatric Association, 2000). In the STSS, participants were asked to rate how frequently each of the 17 items had been true for them in the past seven days, with Likert responses ranging from 1 = never to 5 = very often. In the current study, the period of reflection was changed from seven days to one month, following a similar change by Koenig (2014) in his study of Canadian educators whereby the time period was changed from seven days to a year. This was based on the assumption that exposure to traumatised children would be less frequent for Year Coordinators than social workers, for whom the measure was validated (Koenig, 2014). Scores on the STSS are calculated by adding up the responses related to each of the three domains: intrusion (α = .80), avoidance (α = .87), and arousal (α = .83) (total scale α = .93; Bride et al., 2004). The construct validity and reliability of the STSS has been established with high levels of internal consistency in prior research as well as convergent, discriminate and factorial validity (Bride et al., 2004). The STSS has been used in prior studies investigating the prevalence of both secondary traumatic stress and compassion fatigue among school personnel (Borntrager et al., 2012; Koenig et al., 2018) and juvenile justice educators (Hatcher et al., 2011).

Data analysis

Data was uploaded into the IBM Statistics Package for Social Sciences (SPSS Version 26; IBM Corp, 2020) for data cleaning and analysis. Demographic data (i.e., personal, professional and school characteristics) were reported using descriptive statistics to provide a detailed description of the study's sample. Measures of frequency (i.e., total number and percentage), central tendency (i.e., mean) and dispersion (i.e., standard deviation) were reported. Prevalence of compassion fatigue was then assessed on the Secondary Traumatic Stress Scale scoring instructions identified by Bride (2007). Firstly, scores were calculated for each subscale (intrusion, avoidance and arousal) using an

algorithm approach by adding specified items. An item was considered "endorsed" by the participant if it received a score of 3 or above. An individual was deemed to be experiencing PTSD at a diagnostic level as a result of secondary exposure "if an individual endorse(d) at least one item on the Intrusion subscale, at least three items on the Avoidance subscale, and at least two items on the Arousal subscale" (Bride et al., 2007, p. 67). Secondly, severity of compassion fatigue was interpreted using the following scale: a total score of 28 or less indicates little or no secondary traumatic stress, a score between 28 and 37 indicates mild STS, a score between 38 and 43 indicates moderate STS, a score between 44 and 48 indicates high STS and a score over 49 signifies severe STS.

Results

Participants

Of the 228 participants who took part in the survey, 78.5% were female (*n* = 179) and 21.5% were male (*n* = 49), as shown in Table 1. The largest cohort for age groupings was between 41 and 50 years old, making up 39.9% of the total sample (*n* = 91). This was followed by participants aged between 31 and 40 years old (*n* = 75; 32.9%), and participants aged 51 and over (*n* = 41; 18%). Almost three quarters of participants (*n* =170; 74.6%) were married or in a domestic partnership and more than half of respondents (*n* = 119; 52.2%) had one or more children under the age of 18 living at home.

Table 1: Personal demographics of respondents (*n* = 228)

	n	%
Gender		
Male	49	21.5
Female	179	78.5
Age		
20-30	21	9.2
31-40	75	32.9
41-50	91	39.9
51+	41	18.0
Children		
0	109	47.8
1	33	14.5
2	62	27.2
3+	24	10.5
Marital status		
Single, never married	32	14.0
Married/ Domestic partnership	170	74.6
Divorced/ Separated	26	11.4

School demographics

Table 2 shows the spread across the three main school sectors. The largest group was made up of participants in Government schools (*n* = 105; 46.1%). This was followed by those in Independent schools (*n* = 63; 27.6%) and those in Catholic systemic schools (*n* = 45; 19.7%). Educators from Government schools were somewhat under-represented when compared to Australian-wide statistics which indicate that 56.6% of secondary school staff are employed in Government schools, 21.1% in Catholic schools and 22.2% in Independent schools (ACARA, 2021).

The majority of respondents (*n* = 166; 72.8%) worked in co-educational schools. All Australian states and territories were represented, with the largest groups coming from NSW (*n* = 95; 41.7%) and

Victoria (*n* = 50; 21.9%). Half of the respondents (*n* = 116; 50.9%) worked in schools with a total student count between 600 and 1200 students.

Table 2: School characteristics of respondents

	n	%
School sector		
Government	105	46.1
Independent	63	27.6
Catholic	45	19.7
Size of school		
< 600 students	41	18.0
600–1200 students	116	50.9
> 1200 students	55	24.1
Composition of school		
Coeducational	166	72.8
Single-sex male	17	7.5
Single-sex female	28	12.3
Partially coeducational	1	0.4
Location of school		
NSW	95	41.7
Victoria	50	21.9
Queensland	40	17.5
Western Australia	15	6.6
South Australia	11	4.8
Northern Territory	2	0.9
Australian Capital Territory	9	3.9
Tasmania	6	2.6

Professional demographics

Almost half of the respondents (*n* = 111; 48.7%) had between one and five years of experience in their wellbeing role, as shown in Table 3. The majority (*n*= 140; 61.4%), however, had over ten years of experience as a teacher. The number of students for whom the respondents had personal responsibility varied significantly, with cohorts ranging from less than 50 students (*n* = 5; 2.2%) to more than 200 students (*n* = 57; 25.0%).

The most frequently reported amount of time spent supporting students in mental health distress was between six to ten hours per week (*n* = 79; 34.6%). The total amount of time spent supporting students in distress ranged from 0 to 21+ hours per week. Twenty respondents (8.8%) reported spending 21 hours or more per week with students in distress. The vast majority of participants reported that no time was allocated for colleagues to debrief and engage with one another (*n* = 156; 68.4%), or for individuals to debrief with a supervisor (*n* = 152; 66.7%). An overwhelming majority of respondents (*n* = 206; 90.4%) reported having received no formal training specifically related to compassion fatigue, with an additional eight respondents (3.5%) reporting that they were "unsure" about whether or not they had received formal training.

Table 3: Professional demographics of respondents

	n	*%*
Size of cohort		
Less than 50	5	2.2
51-100	47	20.6
101-150	70	30.7
151-200	48	21.1
More than 200	57	25.0
Years of experience in the wellbeing role		
Less than 1 year	25	11.0
1-5 years	111	48.7
6-10 years	63	27.6
11+ years	29	12.7
Years of experience in teaching		
1-5 years	17	7.5
6-10 years	71	31.1
11+ years	140	61.4
Hours/ week spent supporting students in psychological distress		
0	1	0.4
1-5 hours	56	24.6
6-10 hours	79	34.6
11-15 hours	52	22.8
16-20 hours	20	8.8
21+ hours	20	8.8
Dedicated time for staff to engage/debrief with one another		
Yes	69	30.3
No	156	68.4
Unsure	3	1.3
Dedicated time for staff to engage/debrief with a supervisor		
Yes	75	32.9
No	152	66.7
Received training specifically on compassion fatigue		
Yes	14	6.1
No	206	90.4
Unsure	8	3.5

Prevalence and severity of compassion fatigue

The prevalence of compassion fatigue was measured using the Secondary Traumatic Stress Scale (STSS) scoring instructions recommended by Bride (2007). Firstly, scores were calculated for each subscale, and cases were carefully examined using the algorithm approach. Table 4 shows the frequency of responses which met the diagnostic criteria for Intrusion, Avoidance and Arousal. Results are presented for the total sample ($n = 228$), for females ($n = 179$) and males ($n = 49$) separately, and for those having received ($n = 14$) or not received ($n = 206$) any training related to

compassion fatigue. A total of 142 participants (62.3%) met all three core diagnostic criteria for PTSD by secondary exposure. A greater proportion of female participants (67.0%) met the diagnostic criteria than male participants (44.9%). Similarly, a greater proportion of participants who had never received any training on compassion fatigue met the diagnostic criteria (63.6%) than those who had received training (50%).

Table 4: Frequency of responses which met the diagnostic criteria for PTSD by secondary exposure

	Total (n = 228)		Female (n = 179)		Male (n = 49)		No training received (n = 206)		Training received (n = 14)	
	n	*%*	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Intrusion (Criteria 1)	207	90.8	171	95.5	36	73.5	188	91.3	12	85.7
Avoidance (Criteria 2)	160	70.2	133	74.3	27	55.1	148	71.8	8	57.1
Arousal (Criteria 3)	177	77.6	145	81.0	32	65.3	162	78.6	8	57.1
All three criteria met	142	62.3	120	67.0	22	44.9	131	63.6	7	50.0

Secondly, severity of compassion fatigue was assessed using the guidelines proposed by Bride (2007). One third of respondents (33.5%) scored above 49, placing them in the severe category for secondary traumatic stress (Table 5). A combined total of 158 respondents (69%) scored on or above 38, meaning they were within the moderate to severe categories. Bride (2007) suggests that scores over 38 indicate that steps need 'to be taken to address possible secondary traumatic stress' (p. 160). The mean score was 44.6 (SD = 12.4), with scores ranging between 17 and 82.

Female participants (M = 46.17, SD = 12.28) had significantly higher STS scores as compared to the male participants (M = 38.86, SD = 11.36), $t(226)$ = -3.754, p = <0.01. A small effect size (r^2 = .06) was evident in the mean difference of -7.316 (95% CI: -11.16 to -3.48). The mean score for those who had received no training (M = 44.95, SD = 12.43) was higher than for those who had received training (M = 39.43, SD = 13.22), however, this was not statistically significant, $t(218)$ = 1.602, p = .055. A small effect size (r^2 = .01) was evident in the mean difference of -5.523 (95% CI: -12.32 to 1.27).

Table 5: Severity of secondary traumatic stress by categories

Score range	Severity	Total (n = 228)		Female (n = 179)		Male (n = 49)		No training received (n = 206)		Training received (n = 14)	
		n	%	n	%	n	%	n	%	n	%
< 28	Little or no STS	13	5.5	5	2.8	8	16.3	11	5.3	2	14.3
28 - 37	Mild STS	57	25	43	24.0	14	28.6	50	24.3	5	35.7
38 – 43	Moderate STS	40	17.5	27	15.1	13	26.5	35	17.0	2	14.3
44 - 48	High STS	42	18.5	35	19.6	7	14.3	41	19.9	1	7.1
≥ 49	Severe STS	76	33.5	69	38.5	7	14.3	69	33.5	4	28.6
	M	44.60		46.17		38.86		44.95		39.43	

Table 6 shows the frequency of responses for each of the 17 items on the STSS. Cronbach's Alpha coefficients showed excellent reliability (α = .929) for the full instrument, and good reliability for the subscales of Intrusion (α = .834), Avoidance (α = .818), and Arousal (α = .826). The most frequently reported symptom related to intrusive thoughts about students, with 196 respondents reporting *occasionally*, *often* or *very often* on Item 10 (M = 3.53, SD = 1.039). This was followed by difficulty sleeping (n = 172; M = 3.23, SD = 1.080; Item 4) and feeling easily annoyed (n = 163, M = 3.07, SD = 1.015; Item 15).

Table 6: Secondary Traumatic Stress – Frequency of symptoms[2]

STSS Item #	Never n(%)	Rarely n(%)		Often n(%)	Very Often n(%)	M	SD
1. I felt emotionally numb	24 (10.5)	68 (29.8)	91 (39.9)	35 (15.4)	8 (3.5)	2.71	.971
2. My heart started pounding when I thought about my work with students	40 (17.5)	59 (25.9)	81 (35.5)	31 (13.6)	17 (7.5)	2.68	1.138
3. It seemed as if I was reliving the trauma(s) experienced by my student(s)	75(32.9)	98 (43)	44 (19.3)	8 (3.5)	3 (1.3)	1.97	.885
4. I had trouble sleeping	12 (5.3)	44 (19.3)	83 (36.4)	57 (25.0)	32 (14.0)	3.23	1.080
5. I felt discouraged about the future	26 (11.4)	50 (21.9)	84 (36.8)	47 (20.6)	21 (9.2)	2.94	1.119
6. Reminders of my work with students upset me	48 (21.1)	80 (35.1)	67 (29.4)	27 (11.8)	6 (2.6)	2.40	1.030
7. I had little interest in being around others	42 (18.4)	75 (32.9)	72 (31.6)	29 (12.7)	10 (4.4)	2.52	1.068
8. I felt jumpy	76 (33.3)	70 (30.7)	64 (28.1)	17 (7.5)	1 (.4)	2.11	.972
9. I was less active than usual	24 (10.5)	61 (26.8)	81 (35.5)	46 (20.2)	16 (7.0)	2.86	1.076
10. I thought about my work with students when I didn't intend to	10 (4.4)	22 (9.6)	76 (33.3)	78 (34.2)	42 (18.4)	3.53	1.039
11. I had trouble concentrating	17 (7.5)	59 (25.9)	82 (36.0)	51 (22.4)	19 (8.3)	2.98	1.058
12. I avoided people, places, or things that reminded me of my work with students	59 (25.9)	84 (36.8)	41 (18.0)	27 (11.8)	16 (7.0)	2.37	1.192
13. I had disturbing dreams about my work with students	81 (35.5)	61 (26.8)	51 (22.4)	24 (10.5)	11 (4.8)	2.22	1.179
14. I wanted to avoid working with some students	48 (21.1)	52 (22.8)	77 (33.8)	33 (14.5)	18 (7.9)	2.65	1.190
15. I was easily annoyed	13 (5.7)	52 (22.8)	89 (39.0)	55 (24.1)	19 (8.3)	3.07	1.015
16. I expected something bad to happen	42 (18.4)	80 (35.1)	61 (26.8)	33 (14.5)	12 (5.3)	2.53	1.108
17. I noticed gaps in my memory about being with students	107(46.9)	65 (28.5)	37 (16.2)	15 (6.6)	3 (1.3)	1.86	1.002

2   Permission granted from Dr B. E Bride to adapt wording and timeframe of the Secondary Traumatic Stress Scale.

Discussion

The results of this study reveal that compassion fatigue is a considerable risk faced by Australian Year Coordinators in secondary schools. Almost two thirds (62%) of the study's sample met all three core diagnostic criteria for PTSD due to secondary traumatic stress. Female participants were over-represented in the overall sample, making up 78.2% of the study participants. This represents a substantially higher proportion than the reported 61.2% of female teachers working in Australian secondary schools (Australian Bureau of Statistics, 2021). This may be because the role of the Year Coordinator is seen to be a caring, pastoral role and one that is stereotypically more likely to attract female educators. This is noteworthy given that women have been shown to have a higher risk of developing compassion fatigue symptoms as compared to men (Baum et al., 2014; Hydon et al., 2015; Rankin, 2021). This was evident in the study's sample, with female participants reporting considerably higher rates of compassion fatigue (67%) as compared to their male counterparts (45%). Olff et al. (2007) suggests that one of the reasons that women have a higher risk of developing post-traumatic stress disorder is a result of gender-specific psychobiological reactions to trauma. Essentially, women are more likely to use emotion-focused coping strategies (Olff et al., 2007), and to show greater empathy and empathic concern. This could be due to the socialisation of women to be nurturing, emotionally expressive and emotionally responsive (Baum et al., 2014; Hatfield et al., 1994).

Furthermore, research has indicated that rates of compassion fatigue may be relatively high amongst educators, and consequently amongst Year Coordinators, as a result of a lack of training, a lack of formal support systems and a lack of awareness of the possible impacts of compassion fatigue (Borntrager et al., 2012; Koenig et al., 2018). Whilst supervision and training related to compassion fatigue is commonplace amongst mental health care professionals, training, debriefing and time for colleagues to engage with one another appear to be considerably low amongst educators. This was evident amongst the study's sample, with more than 90% of participants having received no training specifically related to compassion fatigue, and the majority of participants having little or no time to engage and debrief with their colleagues and/or their supervisor(s). These findings are supported by prior research in Australia which has highlighted a lack of trauma training and a lack of emotional support in the workplace, leading educators to experience feelings of powerlessness, guilt and loneliness (Berger & Samuel, 2020; Rankin, 2021; Valent, 2002).

Previous qualitative research in the Australian education sector has reported that educators are experiencing 'worrying impacts' of secondary trauma (Howard, 2018, p.41) and are reporting feelings of emotional exhaustion and emotional pain as result of their work with children (Berger, Bearsley & Lever, 2020). The current findings provide a first quantitative insight into the prevalence and severity of compassion fatigue amongst Australian educators specifically responsible for supporting the social, emotional and physical wellbeing of students. Given that Year Coordinators are at the forefront of student support, it would be reasonable to suggest that they are facing the brunt of a 'national crisis' of youth mental health in Australia (Tsirtsakis, 2020). By not recognising the impact of compassion fatigue, the wellbeing of educators may be neglected, and schools may risk exacerbating the prevailing high rates of teacher attrition in Australia (Carroll et al., 2022; Mason & Poyatos Matas, 2015). Research in the United States has shown, moreover, that untreated compassion fatigue is one of the 'hidden causes' of 'depression, mood swings, sleep deprivation, substance abuse, divorce and problematic educator workforce turnover' (Lawson et al., 2019, p. 423). In professions where individuals are frequently exposed to the trauma and/or emotional pain of others, there is arguably a 'duty to inform' professionals about this occupational hazard which can have impacts on one's cognition, emotions, behaviours and physical health (Figley, 1995, p.17). More research is needed to support the current findings and to understand the factors that may increase or reduce Year Coordinators' risk of developing compassion fatigue. Whilst this article has reported preliminary findings regarding the prevalence of compassion fatigue amongst this cohort of educators, the final doctoral thesis will report additional findings on the correlates of compassion fatigue as observed within this sample.

Limitations

Like all studies, this study had some limitations. A convenience sample was selected due to challenges in reaching participants that were geographically spread across Australia, as well as a lack of known data about the demographic makeup of this cohort of educators. Whilst the use of an online survey allowed the researcher to reach educators across Australia from all three school sectors (Government, Independent and Catholic systemic), a non-response bias and/or sampling bias may have impacted the generalisability about the data. In addition, as the questionnaire was anonymous, it is impossible to verify the identity of participants. The reliability of self-report data has at times been criticised due to the possible risk of participants responding according to what they believe the researcher expects to see (Cook & Campbell, 1979). Criticism has also highlighted the fallibility of human recall, with some researchers suggesting that participants' memory can be influenced by what they *want* to see (Chongho, 2013). Furthermore, in the current study the time period for the Secondary Traumatic Stress Scale (STSS) was changed from one week to one month with permission from the scale developer in order to better capture the frequency of educators' exposure to individuals/ children in distress. This may impact on generalisations made from the findings and direct comparisons with other studies.

Conclusion

Compassion fatigue is a psychological hazard for those who support young people in distress. With rising rates of psychological distress amongst young people in Australia, and prolonged impacts of the COVID-19 pandemic, it is likely that the role of the Year Coordinator will further intensify. The implications of this study's findings suggest that compassion fatigue needs to be recognised by educational institutions and training programs so that effective practices can be put in place to better support staff, and consequently, the students in their care. Further research is recommended to better understand the effectiveness of protective practices including the use of formal support systems, and specific training related to raising awareness of compassion fatigue.

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SPIRALLING LEARNING: THE EFFICACY OF PEER-ASSISTED LEARNING IN EMERGING CONTEXTS

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Author Note

This a literature review examining the educational theory of peer-assisted learning in my studies for a Doctor of Education with Prof. William Cope (supervisor).

ABSTRACT

The recent NSW Curriculum Review recognised that the world in which schools now operate has been transformed by globalisation, and together with ubiquitous technology, everyone has continued and unabated access to communication and information. It would have been a world unrecognisable to the reformers who crafted the Wyndham Report of 1957. The strangle hold of the now outdated curriculum and instructional design the Wyndham Report launched, has been loosened, and even in the heat of a global pandemic, there is an appetite for change. The Masters' Review, "Nurturing Wonder and Igniting Passion" (Masters, 2020), realised the potency of creating enabling conditions to renew and refresh the teaching and learning relationships in our schools. It detailed the frustration of teachers denied the opportunity to share the depth of the learning experience with their students, and the time pressures that bind this intensely human exchange in the experience of education. Its recommendation was to review current external demands on teachers' time, but there may be an untapped resource that is undervalued in the teaching and learning relationship. It is peer-assisted learning. This literature review explores this concept and its effect on learning and motivation in the emerging context of ubiquitous technology.

Keywords: peer-assisted learning, new pedagogies, 21st century education.

Spiralling Learning: The Efficacy of Peer-assisted Learning in Emerging Contexts

Preparing for the unknown is an enduring notion for teachers in schools, where they experience change as non-linear, hinged on their interdependence in a complex adaptive system. The Fourth Industrial Revolution is blurring the variances between digital and human systems as new technologies merge and these evolving uncertainties have created the complex and challenging landscape of 21st century education. Immersed in this age of disruption, teachers' work at the site of learning is underpinned by their commitment, and is a critical "influence on students' motivation, achievement, attitudes towards learning and being at school" (Day, Elliot, & Kingston, 2005, p. 563). At the heart of their commitment is professional identity, steeped in the relationships they hold with students and colleagues in communities of practice (Day, Kingston, Stobart, & Sammons, 2006). Peer-assisted learning (PAL) provides structured opportunities for matched or similar ability peers to support each other's learning. With its roots in socio-constructivist approaches, it strengthens relationships between students and within the class with teachers (Duchesne & McMaugh, 2019) and by inference, can influence a teacher's professional identity and sense of agency (Buchanan, 2015). But it requires an alignment of purpose and deep scaffolding to ensure its success (Fuchs & Fuchs, 1998). Later studies even suggest PAL strategies are not beneficial for all students (McMaster, Fuchs, &

Fuchs, 2006). While substantive studies have proven PAL's efficacy in a under-graduate and graduate medical education contexts (Tamachi, Giles, Dornan, & Hill, 2018), and in various post-secondary settings (Zha, Estes, & Xu, 2019), this literature review explores its application in a secondary school. Drawing on the themes in the literature, it examines the research through these questions:

1. How does PAL influence student motivation and attitude? How does this mediate learning?
2. How does the task design, duration and organisation engage students in cognitive conflict and challenge?
3. What are the limitations and enablers for PAL in a secondary school to improve learning outcomes for students in the long-term?

Concerned for teachers living under neoliberal rule, Connell's (2013) words resonate with teachers: "Education needs coalitions of social groups able to create the spaces in which educational invention will work" (p. 110). Drawing on social interdependence theory, PAL operates as an educational invention leveraged through social groups (Roseth, Johnson, & Johnson, 2008) and is faithful to Connell's (2013) call-to-arms. A surprising ally in this emerging context, artificial intelligence promises to break open new assessment paradigms that "broaden the range of data types and data points for assessment" (Cope & Kalantzis, 2019, p.537). These new applications of artificial intelligence invite PAL to take a more dominant and determined role in learning environments.

> The future will be about pairing the artificial intelligence of computers with the cognitive, social and emotional capabilities of humans, so that we educate first-class humans, not second-class robots.
>
> (OECD, 2019)

This critical literature review aims to recognise the efficacy of locating PAL in a secondary school which experiences intrinsic regulatory demands on its teaching and learning approaches, and an increasingly competitive economic environment. It will attempt to uncover PAL's weaknesses and untapped potential in face-to-face learning environments for early adolescents through to emerging adults and outline new directions for curriculum, learning design and assessment. It details innovations that aim to strengthen our professional learning community and opportunities for our students. PAL is well established in undergraduate and graduate settings but its application through collaborative technologies is unknown in schools. Through this review, we can begin to understand how it could be adapted for a secondary school setting.

Background

From the classical conditioning of the behaviourists through to the progressive education movement borne out of a humanist approach, three rival pedagogies affecting curriculum, learning design and assessment have emerged:

- Mimetic or didactic pedagogies,
- Constructivist pedagogies, and
- Connectivist pedagogies.

Unadorned peer-assisted and peer-led learning strategies sit within a constructivist approach. In more complex settings, they underpin ubiquitous learning in the emerging contexts of integrated social media and social learning environments (Duchesne & McMaugh, 2019). Learning in these interactive, socially constructed environments where knowledge is created collaboratively, is recognised in the Connectivist model (Kalantzis & Cope, 2020). But this self-organising principle underpinning Connectivist pedagogies has in its blind spot, the formal learning opportunities in schools. Something "new" is emerging.

In this landscape of politically charged economic uncertainties, students are lured away from learning by digital entertainment and threatened by future unemployment (Fullan & Langworthy, 2014). Schools are portrayed as obsolete institutions with a focus on surface learning that alienates students,

using anachronistic high stakes standardised tests to divide and conquer. Like a phoenix from the fire, "new pedagogies" (Fullan & Langworthy, 2014) such as "reflexive pedagogy" (Kalantzis & Cope, 2020) are mounting a challenge to the status quo and forging new models of partnerships between and among teachers and students seeking deeper learning goals embracing ubiquitous technology. Figure 1 visualises how new pedagogies rely on an interactive or reflexive process between pedagogical capacity and creating and using new knowledge. Underlying this new dynamic of learning is ubiquitous technology, creating smart environments in the omnipresence of connected online networks.
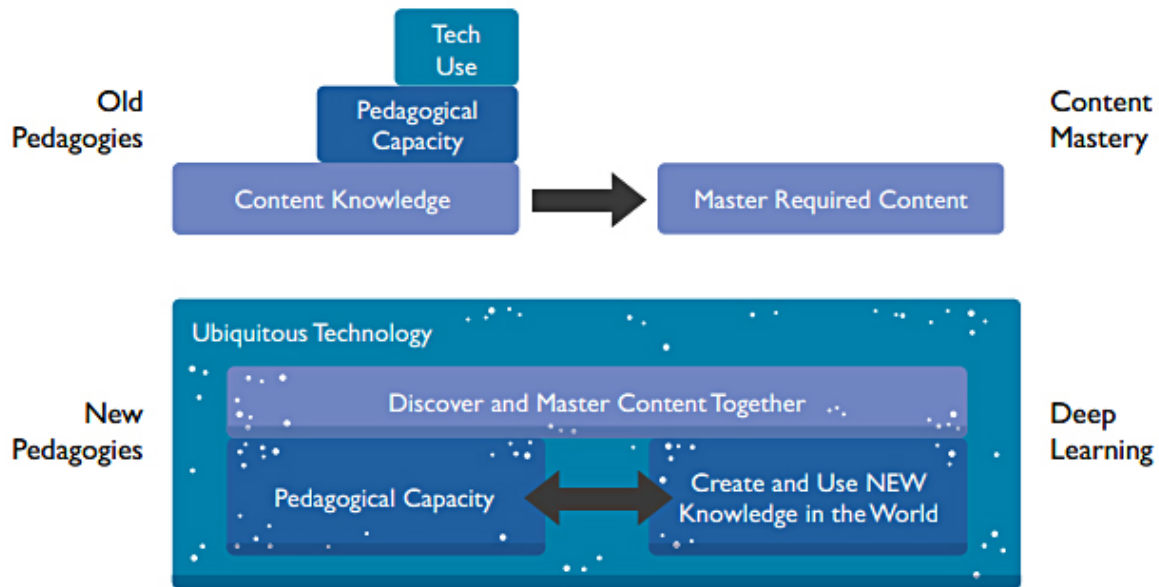
Figure 1: New Pedagogies (Fullan & Langworthy, 2014)

In understanding where we have come from, Seymour Papert (1986) gives us a view of the present past. Papert was a pioneer of artificial intelligence and developed influential learning theories that moved on thinking using the constructivist approach. He reminds us that children are "learning that knowledge is a unified thing and that the scientific and formal and mathematical knowledge is not something separate from their passion for toys, from the things they did ... before they came to school" (Papert, 1986, 1:46-1:59 min). Ubiquitous technology unifies learning and learning relationships, demanding new models of learning and pedagogies that meet students' needs in an interconnected and interdependent world.

Teaching and learning relies on relationships and embedding PAL strategies in a school context has the potential of deepening those relationships. Kalantzis and Cope (2020) posit that "In the new media, peer to peer collaborations, from Wikipedia to YouTube, are the product of massive social collaborations" (p.27). Peer-to-peer learning is being re-imagined in the ecologies of knowledge emerging from online communities (Kalantzis & Cope, 2020), seeping into classrooms and staffrooms. Contingent on authentic relationships, PAL strategies position schools for emerging contexts in a digital age.

Definitions and Distinctions

PAL is commonly described in the literature as another form of student-centred learning that "encourages social interaction and gives learners opportunities to construct their learning and support their peers in doing the same" (Duchesne & McMaugh, 2019, p. 260). Some researchers have further developed this understanding. Packaged as peer-led learning, this refers to learning in a small group led by nominated peers with similar or more developed understandings (Zha, Estes, & Xu, 2019).

Pioneers in the field, Fuchs and Fuchs (1998) describe it as a hybrid form of peer tutoring but PAL has developed in its reach and significance, with increasing digital access for teachers and students in learning communities. It is used increasingly in under-graduate and graduate settings to support students transition to new learning environments. The University of Sydney(2016) explains how PAL has been formalised in the Peer Assisted Study Sessions (PASS), reflecting the hybrid model Fuchs and Fuchs (1998) describe.

CG Scholar (Kalantzis & Cope, 2021), the social knowledge place, has introduced patterns of peer interaction and how they can be channelled and mapped. Its assiduous planning for peer-to-peer collaborations appears significant. In particular, it crowdsources assessment. Using the wisdom of the crowds, research has shown that "the mean of two or more peers' assessments is remarkably close to the score of an expert rater" (Kalantzis & Cope, 2020b, p. 49). It supports complementary research into social interdependence theory. Social interdependence theory explains the interdependence between learners when individuals share common goals and attaining that goal is directly affected by others. "Social interdependence theory predicts that cooperative goal structures will result in higher achievement than will competitive or individualistic goal structures" (Roseth, Johnson, & Johnson, 2008, p. 225). The following figure outlines interaction patterns and predicted outcomes in which it can occur. Using this theory, cooperative learning environments will yield superior outcomes for learners.

Goal structure	Interaction patterns	Outcomes[a]	
		Achievement	Social relationships
Cooperative	**Promotive** Mutual help, sharing resources and information, and acting in trustworthy and trusting ways.	Higher[b]	More positive[b]
Competitive	**Oppositional** Obstructing goal attainment, withholding and/or hiding resources and information from each other, and acting in distrustful and distrusting ways.	Lower[c]	Less positive[c]
Individualistic	**None** Indifference to others' goals, efforts, and outcomes.	Lower[d]	None[d]

[a] Outcomes refer to relative outcomes as tested by this meta-analysis. [b] Cooperative versus competitive and individualistic goal structures. [c] Competitive versus cooperative goal structures. [d] Individualistic versus cooperative goal structures.

Figure 2: Social Interdependence Theory (Roseth, Johnson & Johnson, 2008, p. 225)

In reviewing the literature, this recognition of the interdependence of learners was implicit in the studies of PAL strategies. From a macro perspective, the research was conclusive that students' peer relationships promoted academic achievement, especially during times of stress (Roseth, Johnson, & Johnson, 2008; Tamachi, Giles, Dornan, & Hill, 2018) but distinctions between design and implementation need to be established in order to recognise PAL's benefits in a school context (McMaster, Fuchs, & Fuchs, 2006).

Methods

The research explored in this critical literature review was drawn from peer reviewed journals which attracted a high rating on the Scimago Institutions Rankings scale. The research papers were published over a twenty-year period, providing a longitudinal perspective on PAL. Two meta-analysis studies were included: Roseth, Johnson, and Johnson (2008) and Zha, Estes, and Xu (2019). Combined, these works drew on 176 independent studies and over eight decades of research. Both studies supported the understanding that peer relationships had a moderate and positive effect on students' cognitive achievements. Analysis of effect size, allowing for bias, was used to determine overall effect.

Other studies in the review utilised large-scale experimental field trials to examine the effects of PAL strategies on literacy development: Fuchs and Fuchs (1999) and McMaster, Fuchs, and Fuchs (2006). This gold standard in research, the randomised control trial, offered valid and reliable results to inform the discussion. A further study reviewed in the literature was by Tamachi et al. (2018). This study utilised an interpretative phenomenological approach, providing a well-rounded understanding of the lived experience of students of the peer relationship in PAL sessions, and how this social congruence facilitated constructive group dynamics.

Findings

In summarising the findings of the research literature, the discussion is anchored to three themes that inform pedagogical approaches in the classroom when using PAL strategies:

1. student engagement and its effect on the learning environment.
2. task design, duration and organisation; and
3. the limitations and enablers for PAL in a secondary school.

PAL is grounded in Piaget's theory of learning, which holds that students communicate and learn more effectively through peer interaction rather than in dealing with authority figures (Zha, Estes, & Xu, 2019). PAL also reflects key premises in Bandura's social learning theory that support the proposition that most human behaviour is learned through observation, imitation, and modelling (Duchesne & McMaugh, 2019). Bandura determined that when a group shared a belief in its unified capability to organise and work together, they can overcome challenges. He referred to this as their "collective efficacy" (Bandura, 1977). Anders' (2018) infographic details the dimensions through which this can be actioned. Positive correlations associated with collective efficacy were observed in the study by Tamachi, Giles, Dornan, and Hill (2018).
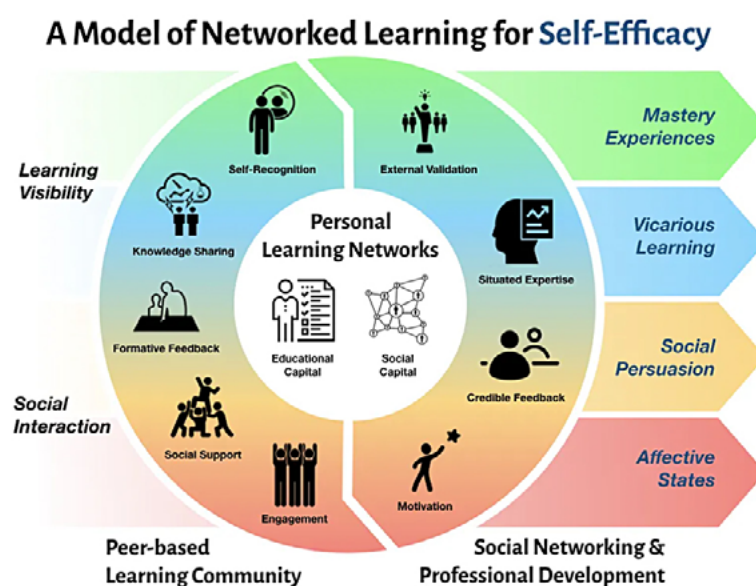

Figure 3: A Model of Networked Learning for Self-Efficacy (Anders, 2018)

In Tamachi, Giles, Dornan, and Hill's (2018) exploration of the lived experience of medical students in a university setting, students described the PAL sessions as "safe and egalitarian environments which shaped the type and style of learning that took place" (p.9). The same authors noted that participants perceived that PAL had flattened the hierarchical structure and that when combined with peer leaders' readiness to share their understanding of the hidden curriculum, students felt they were gaining new knowledge and strategies to move on with their learning. The social congruence in this context translated into a willingness to collaborate authentically.

Roseth, Johnson, and Johnson's (2008) meta-analysis also delved into peer relationships, specifically early adolescents and when and why their peer relationships affect engagement in learning. Adolescents are in a melting pot of emotions where they yearn for independence and autonomy yet seek social acceptance while becoming more self-conscious. Their experience is filled with paradoxes making positive peer relationships crucial in navigating the teen terrain. The study concluded that "when individuals' goals are structured cooperatively (positive interdependence), their actions will tend to promote the success of others (e.g., mutual help and assistance, sharing resources and information, and acting in trustworthy and trusting ways)" (Roseth, Johnson, & Johnson, 2008, p. 225). There are limitations on these findings however, as the study made use of broad generalisations of achievement and social goals but nevertheless, recognised teachers need to emphasise cooperative learning goals. Studies emphasised that in structuring and delivering tasks, several other aspects in addition to cooperative learning goals were significant.

Zha, Estes, and Xu's (2019) meta-analysis of 28 studies in face-to-face classrooms recognised that problem-based learning (PBL) using real-world or authentic learning designs had a positive effect on students' motivation and attitudes to learning. There was scant evidence however, that this directly translated into improvements in students' acquisition of knowledge in the immediate experience. However, the literature supported the claim that PBL's effect on engagement strengthened students' understanding of conceptual knowledge through cognitive conflict and challenge. Closely associated with these positive effects in Zha, Estes, and Xu's (2019) meta-analysis was the duration of the task. "Students retain most content learned in the first 10, and last 20, minutes of a lecture class" (Zha, Estes, & Xu, 2019, p. 9). The authors offer the caveat that these results were contingent on explicit training for facilitators and peers. In the AITSL(2017) resource "Peer-supported learning", the teacher demonstrates these attributes for best practice PAL. The rigour in its implementation is supported by the "pose , pause, pounce, bounce" framework.

Fuchs and Fuchs (1998) are pioneers of PAL strategies in literacy development. Key findings in their research around collective efficacy and social congruence support complementary research but their close study of literacy development, specifically reading, offers a more granular understanding of PAL in a secondary school setting. Follow up work in Fuchs, Fuchs, and Kazdan (1999) and McMaster, Fuchs, and Fuchs (2006) recognise PAL strategies can address serious reading problems in adolescents. The authors cite changes in legislation to create a more inclusive learning environment for students with disabilities as the motivator for teachers implementing the PAL program to address reading problems. The program yielded gains for students in remedial and special education classes where teachers implemented the program with fidelity after explicit professional learning that supported their knowledge and understanding of the program. It also paired students with a more competent peer who had engaged in facilitator training. These design elements present limitations on wholesale engagement of specific PAL programs in secondary schools.

Discussion

Children and students in our schools are the first generation who have never known the world without the internet. Their use of technology is implicit in their daily lives. Seymour Papert's predictions of an immersive experience with technology, blurring the boundaries between formal and informal learning are with us. This infographic from Visual Capitalist strengthens an understanding of this ubiquitous technology for collaboration.
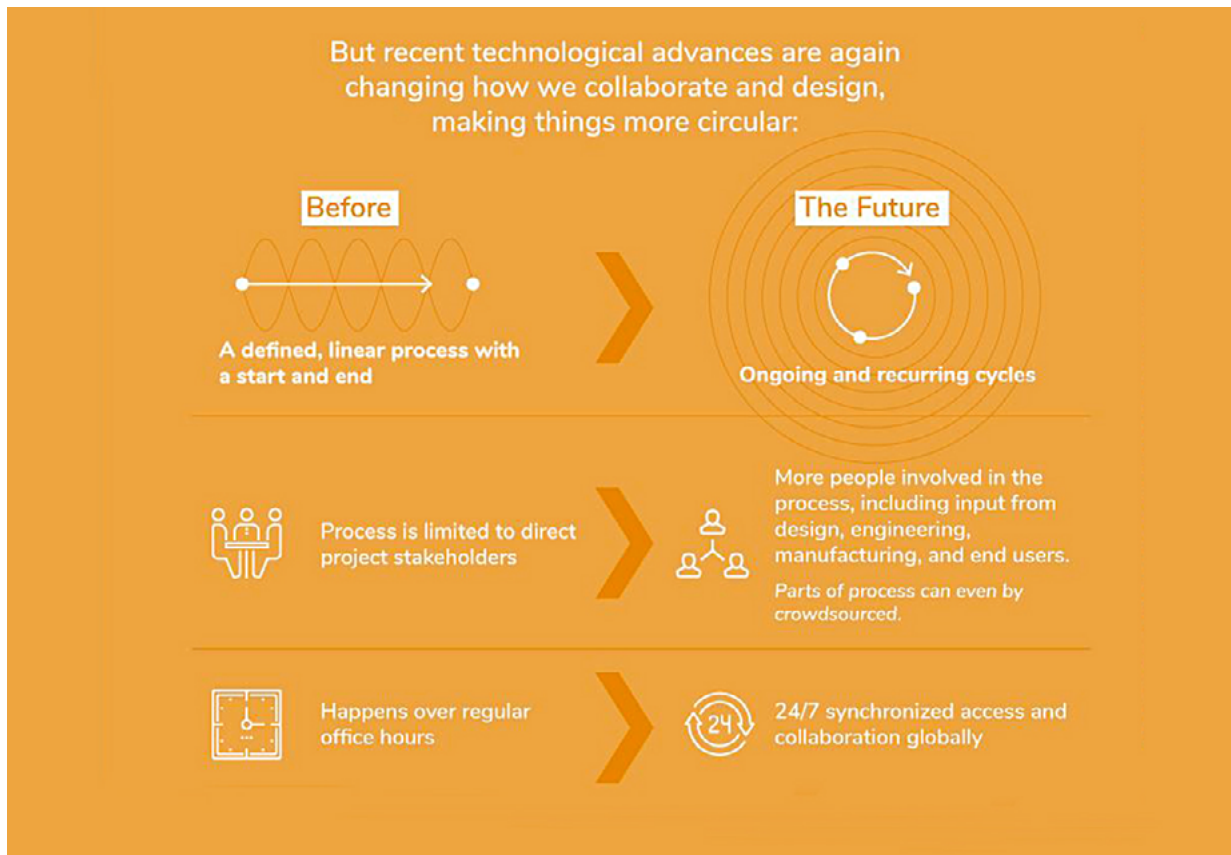
Figure 4: The Future of Collaboration in the Artificial Intelligence Era (Desjardins, 2018)

Against this backdrop, schools are buffeted by neoliberal reform dominated by positivist economics which has distorted policy, curriculum and pedagogy in the New South Wales school sector. High stakes testing environments such as the Higher School Certificate (NSW) focus attention on examination strategies and incentivise teachers to 'teach to the test', narrow the curriculum and enforce a mechanistic didactic teaching repertoire. PAL offers a democratised access to knowledge networks and collaborative practices that lift all involved but in this dynamic under the regulatory gaze of system authorities and policymakers, it seems that resistance and struggle are inevitable. In crafting recommendations for implementing PAL strategies, I am heartened by Foucault's work to "see, talk or write beyond the boundaries of this reality" (Welch, 2015, p. 189).

Some clear recommendations are evident in the research:

- Prior to launching a PAL program, teachers and facilitators need dedicated professional learning to support implementation.
- In establishing PAL strategies in the school day, it is important to structure cooperative learning goals that are clearly communicated to students.
- Pair peers with a facilitator or student who has some prior experience or knowledge needed for the course.
- Teachers need to limit their key dialogue to the first 10 minutes and last 20 minutes of an hour lesson and allow students to engage with each other at other times.
- In structuring a PAL strategy for a class or cohort, teachers need to establish routines that are consistent and maintained.

Conclusion

The impressive body of literature represented across these peer-reviewed journal articles suggest that students' peer relationships can enhance academic achievement, especially conceptual knowledge over the longer term. Knowledge acquisition is better served by more direct and explicit teaching approaches where students have access to learning intentions and scaffolds. Adolescents in school settings live with the outcomes of poor engagement and alienation, feeding into aggravated poverty and stratified social inequalities. Teachers observe this daily in schools and their communities. I live and work in a regional area recovering from the ravages of bushfires that decimated the local economy, compounded by the global pandemic. There are limited opportunities for students in our local economy. We need to find new approaches that will re-kindle their sense of optimism in themselves as life-long learners. Engaging peers who share a sociocultural context in PAL is more likely to foster a sense of belonging and a growing academic self-concept that predicates success in a school environment to avoid economic marginalisation.

While multiple studies claim PAL was effective in a post-secondary setting (Tamachi, Giles, Dornan, & Hill, 2018), these results from a high-stakes environment where students have elected to be, may not translate to a school environment where students do not always feel they belong. McMaster, Fuchs, and Fuchs (2006) suggested that PAL strategies are not always beneficial for students who need early reading intervention. There is much to be gained by clarifying how PAL can enhance learning outcomes in a school setting.

In order to create participatory and egalitarian cultures for peer interaction in schools, further research is required. In the NSW context, we need to investigate how artificial intelligence could support students and teachers in managing data streams that inform the design of learning and assessment structures in a school setting. Peers are one of our greatest resources in schools, plentiful and inexpensive, and tapping into this resource has efficiency dividends in building social capital as well as economical resource allocation. Technology can facilitate collaborative, problem-based learning approaches and provide more personalised feedback from peers and teachers, but we need to understand more clearly how this can work in NSW schools. The next step is building the capacity of teachers and teacher leaders to support this transformational culture created from a collaborative vision. The task seems inexhaustible but as Papert's present past reminds us, it has already begun. Papert prophetically says, "We don't know what the schools of the future will be like, but we know what they won't be like" (MIT Media Lab,1986). New pedagogies and ubiquitous technologies are heralding that new future for schools. It is time we started to plan for the future we want and strengthening peer-to-peer relationships using PAL strategies that foster and empower young minds in a spirit of cooperation, offers a hopeful beginning.

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'OVERWHELMED' AND 'UNDERPREPARED': THE REALITIES OF OUT-FIELD TEACHING IN GEOGRAPHY DURING A TIME OF TRANSITION INTO THE TEACHING PROFESSION

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ABSTRACT

As pre-service teachers transition into the profession, it is likely they will experience teaching beyond their subject specialisation and/or stage of schooling. This is situation is known as out-of-field teaching. Whilst there is a growing body of evidence about the extent and impact of out-of-field teaching occurring in the teaching profession overall, little is known about out-of-field teaching in geography. This article shares important findings from a recent doctoral study that progresses understanding about out-of-field teaching in geography. These findings were initially shared at the 2021 National Summit on Teaching Out-of-Field (https://ooftas-collective.org/toofsummit) and are written up more fully and more formally in my thesis (Caldis, 2021, Transitioning into the profession and transformation of pedagogical practice in the secondary geography classroom) and in Caldis (2022) Transitioning into the profession with an out-of-field teaching load. The article showcases the realities of out-of-field teaching faced by five pre-service geography teachers as they transitioned into the teaching profession. 'Anna', 'Emily', 'Grace', 'Karen', and 'Matt' (all psuedonyms) join the profession expecting to teach geography, however, not only were they asked to teach out-of-field, they were also asked to support out-of-field colleagues to teach geography. The realities are shaped around lived experience, responses to the emerging constraints and the consequences on their practice.

Introduction

Out-of-field teaching can be defined by subject, stage of schooling and also by self-identification of practice (Du Plessis, 2015; Hobbs, 2013). It is known to occur in response to factors such as teacher shortages (sector, subject, locations) and policy decisions about funding, employment and timetabling (Shah et al., 2020; Weldon, 2016, 2018). Out-of-field teaching is reported as a common experience by those who are entering the teaching profession and journeying through their early-career years (Caldis, 2022; Campbell et al., 2019; Du Plessis & Sunde, 2017). It is also reported as something for which initial teacher education programs do not provide suitable preparation. As a result, when this situation is encountered by early-career teachers it has potential to negate wellbeing and disrupt classroom management (Caldis, 2022; Du Plessis, 2020).

The research findings shared are from my recent doctoral research. Findings go some way towards being able to understand the urgency and impact of out-of-field teaching in geography, as called for in Geography: Shaping Australia's Future (NCGS, 2018). Focus is on the realities of out-of-field teaching faced by pre-service geography teachers as they transitioned into the profession. My research was a qualitative longitudinal study, conducted in three phases over 18 months and conceptualised around pedagogy and reflexivity. 'Anna', 'Emily', 'Grace', 'Karen' and 'Matt' were purposely sampled from a geography methodology unit at an Australian metropolitan university. Out-of-field teaching was not a pre-determined research focus, however, it emerged in research findings as being a prominent part of journeying into the early-career years of teaching,

1. Lived experience, constraints and consequences

The lived experience, constraints, and consequences relate to out-of-field teaching being noted by four participants as a distinct entry point into the profession and characteristic of their first year of teaching. Teaching out-of-field was identified as a constraint to teaching practice due to a lack of preparation from the ITEP, the incidence of precarious employment and whole school timetabling decisions. Feeling stressed and overwhelmed together with difficulties in managing the classroom compared to when teaching their in-field subjects were mentioned as the main consequences of teaching out-of-field.

1A An entry-point into the profession

- Anna, Grace, Karen and Matt identified teaching out-of-field as being a distinctive entry-point into the profession and a feature of their first year of teaching. Grace, Karen and Matt taught in Sydney; they each entered the profession as a casual relief teacher and then quickly gained a short-term contract within the Human Society and Its Environment (HSIE) department at a given school (approximately 10 – 12 weeks). Anna relocated to regional New South Wales for employment on a 12-month contract as a HSIE teacher at a Kindergarten to Year 12 school.

- As an entry-point into the profession (Phase 2 of the study), Grace, Karen and Matt experienced out-of-field teaching as part of their day-to-day casual relief teaching appointments during Term 3 (July – September) where they were either teaching across several schools or teaching across different departments in one school. Grace, Karen and Matt soon had their casual appointments extended into a short-term contract as a HSIE teacher at a designated school for the remainder of Term 3 and throughout Term 4 (October – December). The short-term contract requirements meant they took on the teaching load of a HSIE teacher who was on leave. Whilst there was a small amount of geography on their timetable, the HSIE subject combination did not match participant subject specialisations. For example, during Phase 2: Profession-entry, Matt taught commerce, business studies and geography yet his subject specialisations were geography, history and modern history. Karen taught "multiple subjects: arts, geography, commerce, legal studies and future learning [but] I'm only trained in one of those subjects". Anna was hired as a HSIE teacher, yet Anna's timetable included agriculture, design and technology, Stage 3 (primary), geography and history. As a result, teaching out-of-field beyond HSIE was a dominant component of Anna's entry into the profession and first year teaching.

- Emily did not experience teaching out-of-field in Phases 2 and 3. Due to a vacancy arising in the Social Sciences department, she was hired as a geography teacher at the school where she completed her professional experience. Although her Head Teacher mentioned the possibility of also teaching commerce, Emily, a career-change teacher, had developed a strong subject-identity for geography, and had confidence to cite recent research about the impact of out-of-field teaching to her colleagues. As a result, her timetable remained in-field throughout her entry into the profession and first year of teaching.

1B Lack of preparation from ITEP and whole school timetabling decisions.

- Phase 1 of the study focused on professional experience and the final stages of candidature in an initial teacher education program, at no time throughout this phase did the participants mention or experience teaching out-of-field. Phase 2 of the study focused on entry to the profession and Phase 3 on the first school year of teaching. It was during Phases 2 and 3 that participants spoke frequently about the out-of-field teaching phenomenon in response to feeling "overwhelmed" and "underprepared" from the ITEP. Matt withdrew from the study after Phases 1 and 2 citing that his timetable for the new school year (Phase 3) did not include geography although he was hired as a HSIE teacher, and he would mostly be teaching out-of-field.

- Anna, Grace, Karen and Matt self-identified as out-of-field teachers, even within a HSIE context depending on the subject being taught. They reported OOFT as a constraint to their feelings of being able to cope with the demands of entering and transitioning into the profession. They also reported the ITEP as not sufficiently preparing them for teaching out-of-field whilst also attributing this experience to timetabling decisions, faculty organisation and precarious employment.

- Matt said he "felt constrained by teaching commerce [because] I've never been prepared for that … it comes with a level of stress and expectation so that reduces my excitement [about teaching]". When elaborating about 'expectation', Matt explained the students don't know you are teaching out-of-field, only you do, but the students are still expecting a comprehensive and detailed lesson for the given subject, and that placed additional stress on him as a teacher who is new to the profession.

- Anna had the largest out-of-field teaching load compared to the other participants and referred to this phenomenon as being "indicative of my year in review". Anna also explained how she felt lack of preparation in the ITEP was a contributing factor to her struggle in coping effectively with the move away from her networks to a regional school and community; also her difficulty in adapting to a co-educational context when all her professional experience placements had been in all-girls schools. Overall, Anna said her transition into the profession was "a LOT", but she felt she managed the out-of-field teaching experience by just "keep[ing] going" despite it being "debilitating and draining", and that she "survived under pressure so that is a success".

- There were varying degrees of scale of out-of-field teaching, for example, Grace had a history and geography teaching specialisation which accredited her as a HSIE teacher, yet within a HSIE faculty during Phases 2 and 3, Grace also taught commerce and business studies. As mentioned previously, Anna taught several subjects beyond HSIE and at the end of Phase 3 when her contract was extended for another 12 months, there was "another twist, teaching languages in 2021". Grace and Karen often questioned why they had to teach business studies or commerce when there were HSIE colleagues who were teaching geography out-of-field. As Grace and Karen were the specialist geography teachers in the HSIE faculty, they were expected to help and provide advice to their non-geography-specialist HSIE colleagues about how to teach geography. Grace wondered "why can't I have a full teaching load of geography?" when there were enough geography classes to fill her timetable.

1C Stress, feeling overwhelmed, and difficulties with classroom management

- Anna, Grace, Karen and Matt identified an increasing amount of classroom management problems occurring with their out-of-field classes compared to when they were teaching geography. They also mentioned experiencing heightened levels of stress and often feeling overwhelmed by teaching out-of-field, which affected their wellbeing and also contributed to Anna's development of serious problems with anxiety.

2 Possibilities for support

There were three areas of support mentioned by the participants which they felt enabled them to navigate the complexities of out-of-field teaching as part of their entrance and transition into the profession. One area of support was the creation of a dialogic safe space through the doctoral study group which provided a mentoring structure using explicit theory-practice reflection activities with a recurring question in every data generation activity in each phase. For example, the use of reflexivity theory to interpret context was noted as being helpful for participants to understand what enables and constrains their practice so that they can develop a viable plan for action to respond to the identified constraint of teaching out-of-field. The recurring question, 'What makes your geography lesson geographical?' became a point of understanding what was distinctive about teaching geography as a

specialist teaching subject, however, this question also became a point of application for participants to delve into the distinctiveness of other subjects. For example, Anna started to insert the name of other subjects she was teaching into the question, such as 'what makes this agricultural lesson agricultural?'

Another area of support for learning how to teach an out-of-field subject was related to engaging with expert others. This occurred through either joining a professional teacher association, or through accessing social media such as subject-specific FaceBook groups, or by developing relationships with other teachers in their school or department who teach the given subject as their specialist area.

Participants also drew heavily on their personal values and beliefs about what it means to be a teacher to propel them through the difficult moments of teaching out-of-field. For example, Anna had a strongly-held belief that "country kids should be able to access the same quality of education as city kids … and this is my responsibility to provide them with the best possible education".

Conclusion

In conclusion, teaching out-of-field was a prominent experience of entering and transitioning into the profession for five early-career HSIE teachers. Difficulty in responding to and managing the out-of-field teaching phenomenon was attributed to a lack of preparation in the ITEP, school-based timetabling decisions, and precarious employment. Feeling stressed, being overwhelmed, and having to manage an increased incidence of classroom management issues were identified as the results of teaching out-of-field. Support structures to help navigate the complexities of OOFT were named as being the use of explicit theory-practice reflection activities within a mentoring structure, engaging with expert others, and harnessing and acting upon the personal values and beliefs about what it means to be a teacher.

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IF POWER ACTS UPON US: FEARLESS ECONOMICS

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Author Note

This an educational practice analysis submitted September 14, 2020 for my studies in the Doctor of Education with Prof. William Cope (supervisor).

ABSTRACT

The recent New South Wales Curriculum Review (Masters, 2020) urges us to design new syllabuses that give greater priority to fundamental concepts and principles. One of the key design principles, "learning with understanding", seeks to restore the educational priority of deep knowledge and understanding in the teaching and learning relationship in schools. The study of HSC Economics has fallen foul of a crowded curriculum, trapped in a superficial memorisation of facts and procedures, where students experience disconnection. Enrolments in HSC Economics have dwindled and become concentrated in an elite subset of male students in selective schools with significant resources and Economics has lost its sheen in promoting economic pluralism and critical literacy. This paper evaluates a course design that privileges deep understandings of core concepts and principles around factual and procedural knowledge. In the spirit of "learning with understanding", it uses strategies and course design that empower social and emotional engagement to offer a model that connects students with Economics, contributing to a broad education for 21st century people.

Keywords: HSC Economics, learning with understanding, curriculum design, 21st century education.

If Power Acts Upon Us: Fearless Economics

Economics has become a battleground for technical rationality and in the Higher School Certificate (HSC) framework where the supra-national forces of globalisation make us all market players, teachers teach to the test (Looney, 2009). Economics teachers are thrown unwittingly into this dynamic that narrows the curriculum (Polesel, Dulfer, & Turnbull, 2012), constricts professional autonomy (Welch, 2018), and binds teachers to a mechanistic teaching repertoire (Fogarty, 1997). In this uncomfortable position they wrestle with the problem of resisting a state-endorsed curriculum and its agencies and edicts, especially where there are significant reputational and resource repercussions.

Echoing Winston in George Orwell's chilling "1984", Stephen Ball (2013) reminds us that we are all being observed, even when we are not aware of exactly when. While most would agree with Ball's sentiment that attempts to wake us from our sleepwalking, recognising we operate in a surveillance society can empower teachers to be exhibitionists. Teachers can show what we know and argue our perspective without surrendering our purpose to a neoliberal agenda. It is convenient to make an enemy of the state, a faceless entity that imbues everything hateful by a liberal-minded and altruistic teaching profession. No doubt, there may be dark and ominous forces that plague a designed future threatening hope and optimism for new horizons of integrated learning where an emerging critical generation can challenge and transform our world. However, beyond the architects of neoliberalism, I wonder who is ultimately responsible for this competitive, cut-throat and 'teach to the test' dynamic. Walking through the years of my teaching I wonder if we have succumbed to being the mild-eyed melancholy lotus-eaters of Tennyson's imagination. My thoughts turn to Michael Apple (2013) whose direction is simple yet powerful, "Don't mourn. Teach and organize" (p. 25). This paper describes how I have answered this clarion call in a redesigned Economics course for the Higher School Certificate (HSC).

Powerful Knowledge

In truth, this paper has taken years to write. I studied Economics for my HSC and at that time, I recognised it was the discipline and way of thinking that echoed my own innate understanding of how the world operated. I went on to study an economics degree, graduating in a recession. While it was ironic understanding why I could not secure employment, economics made me a life-long and life-wide learner and I found its applications everywhere I looked. Years later I was awarded a scholarship from the Reserve Bank of Australia and the NSW Premier to investigate on the global stage why women were walking away from economics in schools and what could be done. I published the work "Future-proofing Economics: Issues, Remedies and Redemption" (Mockler, 2018). Findings from this earlier research informed my next steps and in the context of this paper, serve as a foundation for exploring this innovative learning practice that is informed by leading thinkers and researchers who support teaching for understanding.

The course design is motivated by Young's (2014) concept of powerful knowledge. "It starts from the idea of citizens being equal before the law and extending that to the idea that children as future citizens all have the same educational rights" (Young, 2014, p. 70). Young's premise is that the curriculum should guarantee equality. The decline of economics education has profound consequences for this higher purpose. "Students must be given opportunities to investigate the moral, economic, psychological and political dimensions of societal problems in order to develop key competencies (critical thought, public deliberation, perspective taking, reflection, social action, etc.)" (Alviar-Martin & Baildon, 2016, p. 72). In creating this course, this core ideal was never far from my mind.

The preliminary economics course is the foundation year for the HSC and the innovative learning practice under review here is designed around essential questions which speak to powerful knowledge, including:

- Is our economy future-proof?

- How does the economy contribute to my well-being?

- Who is making decisions about my economic future?

<div align="right">Mockler (2020)</div>

It is underpinned by cognitive load theory (CLT), designed in a model that recognises Bruner's spiral curriculum (Bruner, 1966) in a constructivist framework. It uses a layering effect that supports a students' working memory building schema for long-term memory storage. This recognises key understandings from CLT that there is a limit to how much new information can be processed and that there are no known limits to how much the human brain can process from stored information (CESE, 2017). The scope and sequence outlined below indicates how related areas of topics are organised in a spiral curriculum where students return to topics over time (colour mapped to indicate related topics), building a conceptual understanding through repetition and opportunities for analysis and application.

Sample Scope and Sequence: Preliminary Economics 2020

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11
Term 1	The operation of an economy	The role of consumers in the economy	Demand	Supply	Market price	AT1 focus	Demand and supply for labour	The Australian workforce	Types of financial markets	Government intervention in the economy	Term in review

The Economics of Everything (total 40 hours)
Current issues: Economics is part of our daily lives and its influence is everywhere. This unit is about how we can tune into economic thinking and use it to understand what is happening around us.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Term 2	The nature of economics	The role of the market	Alternatives to market solutions – the role of government	Federal Budget 2020 review	Price elasticity of demand	Labour market outcomes	Labour market trends	Financial markets in Australia: Borrowers	Financial markets in Australia Lenders	Term in review

Curious Choices (36 hours)
Current issue: Every choice we make can be explained by economics, whether it is online dating or following a sporting team. Our choices rely on markets, demand and supply and the money trails.

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Term 3	Economies: their similarities and differences	The role of business in the economy	The role of business in the economy	The role of business in the economy	Financial markets in Australia	Financial markets in Australia	Financial markets in Australia	Labour market institutions	The role of the government	The role of the government

The World is Not Flat (total 20 hours)
Current issue: Economies are different but they still trade. Mutual trade is beneficial but sometimes it can lead to problems. What consequences are there for our quality of life?

To Infinity and Beyond (total 24 hours)
Current issue: Market forces are not always reliable, and we need governments and other institutions to safeguard our democracy and our standard of living. The problem is how do we know where and when?

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Term 4	Economic functions of the Aus govt	Federal budget	Review							

To Infinity and Beyond (total 24 hours)
Current issue: As above.   HSC

Figure 1: Preliminary Scope and Sequence (Mockler, 2020)

The initial layout of concepts in the first topic is a cursory glance in some areas but it introduces to students the main ideas that they can build on as the course progresses. It introduces these chunked concepts to their working memory around the schema of well-being and sustainability. In subsequent units, students can access introduced concepts and begin to layer meaning around them, moving to an analytical framework to show their understanding.

Mockler (2020)

Couched in the spiral curriculum, it utilises Cope and Kalantzis' (2020) epistemological schema where students move through experiencing, conceptualising, analysing and applying to make new knowledge through repeated exposures to content areas of economic concepts (see Figure 2: The Knowledge Process below). In connecting with Young's (2014) powerful knowledge, it centres on "how economics can truly serve a future, a future that is fair, sustainable and supports the well-being of people" (Mockler, 2020). Many economists share this purpose.

Ways of Knowing (Kalantzis & Cope, 2020)

Figure 2: The Knowledge Process (Cope & Kalantzis, 2020)

Ha-Joon Chang is a renowned economist and his uncompromising mission is to bring an economic understanding to everyone. He reminds us that 95% of economics is common-sense but it is made to look difficult with jargon and mathematics (Ha-Joon Chang, 2016). Chang's dialectic around the evolution of economics parallels Ken Robinson's (2006) "Do school's kill creativity?" in that it urges us to move beyond binaries to educate for a nuanced and exploratory mindset that fosters creativity. As he says, if all you have is a hammer, you'll think everything is a nail. This course design recognises the role of creativity in critical thinking in the interleaving of knowledge with application in real world and authentic contexts.

The course evaluated in this paper details an evidence-informed approach to teaching economics that privileges social knowledge, ahead of the productivity dividend of manufacturing human capital. It rejects the coercive control of positivist economics. Its ideal is to promote a justice that a competitive dynamic often sidelines and it moves against the tide of standardisation pressures that weaken teachers' autonomy and agency over curriculum and delivery. It opens spaces for truth-telling of how an understanding of economics can future-proof our physical, social and psychological environment and support our wellbeing by allowing students to investigate the powerful knowledge economics can give us.

Focus of the Study

"If power acts upon us in and through our subjectivity, then that is where our resistance and struggle to be free should be focused" (Ball, 2013, p. 152).

Ball's (2013) analysis credibly reveals that unless we engage in a critical ontology of ourselves, our disciplines, our institutions, and of our teaching practices, nothing will change (Harwood, Muller, & Olssen, 2014). A dormant future lurking in our past will quietly and insidiously, remain there. This is what has happened to economics. In the context of a growing disconnect between the relevance of curriculum, the demands of mass education and negotiating a diversified and questioning cohort, economics teachers have been leaning on the past, using a teacher-centred didactic pedagogy (Gwartney & Schug, 2011). Armed with the realisation that "productive rather than truthful individuals are the new subjects and the central resource in a reformed, entrepreneurial public sector" (Ball, 2013, pp. 139–140), I set out to find ways that were both productive and truthful.

In a case study that involved five schools in the Australian Capital Territory and New South Wales, 147 students responded anonymously to a series of questions that investigated the relative importance of various factors that influenced their study preferences for economics (Mockler, 2018). The leading influences for choosing a subject were 'Personal interest', 'Interesting subject' and 'Career choices' followed closely by 'You enjoyed it in Years 7–10'. The figure below represents the averages for each influence, where "1" represents little importance and "5" considers this influence to be extremely important. It also demonstrates the relative significance of these factors.
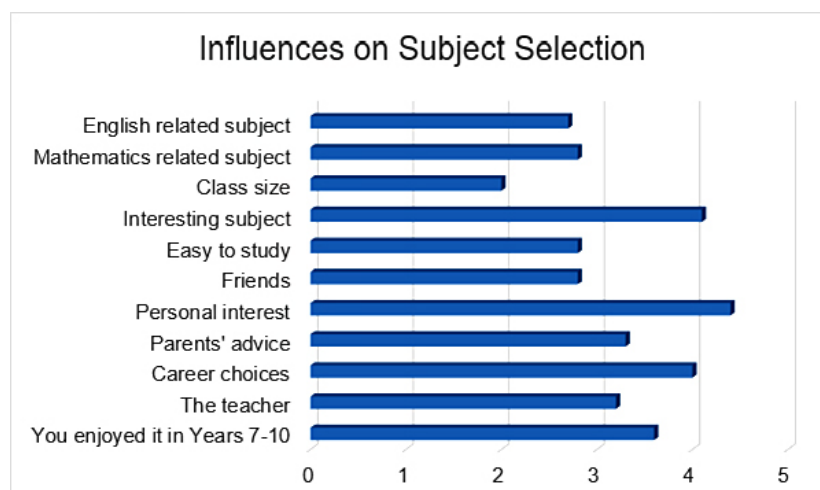

Figure 3: Influences on Subject Selection (Mockler, 2018)

Engaging students in personally relevant and interesting material reflects their preferences detailed in Bruner's (1966) instructional theories and Cope and Kalantzis' (2020) ways of knowing. Experience and connection are privileged in launching the learning. The case study (Mockler, 2018) also recognised that when economics was delivered by qualified and supported teachers who deliberately planned for an integrated approach from other subjects, such as history, geography, business, law, civics and citizenship and used a deliberate and strategic combination of instructional and inquiry-based learning, students were more likely to indicate a preference for further study of economics. The challenge was to design a learning program that addressed these key findings and made a space for truth-telling. The findings evaluate the new course's effectiveness in addressing these needs.

Findings

The findings reported here use comparisons to other groups where classes were not designed around the parameters described earlier in the paper. Individual student reflections and sample answers are also used to indicate learning gain and if the students reflected on their economics study as personally relevant, interesting and something they enjoyed. These indicators relate to survey data in the earlier case study (Mockler, 2018) that are a pre-cursor to continuing the study of economics.

In student evaluations of the course, comments indicate the growing appreciation of how the course is structured to foster opportunities to learn deeply, building a conceptual understanding around economic problems and issues. When asked this question, "What aspects of this course were most useful or valuable?", initial evaluations volunteered comments such as:

Learning about the economy itself so I could understand whats (sic) happening in the world

The use of extremely simple structured guidelines of what will be covered in the following weeks / course made it easier to prepare and study.

In a subsequent evaluation, comments recognised a deepening understanding:

I feel like we have really gone into great depth concerning human behaviour in economics, it feels as if we are studying people more than money.

In evaluating the course content and its organisation, students indicated their preferences in the following chart. They recognised the course design allowed all students to participate fully in a cooperative model which is beneficial for learning gain.
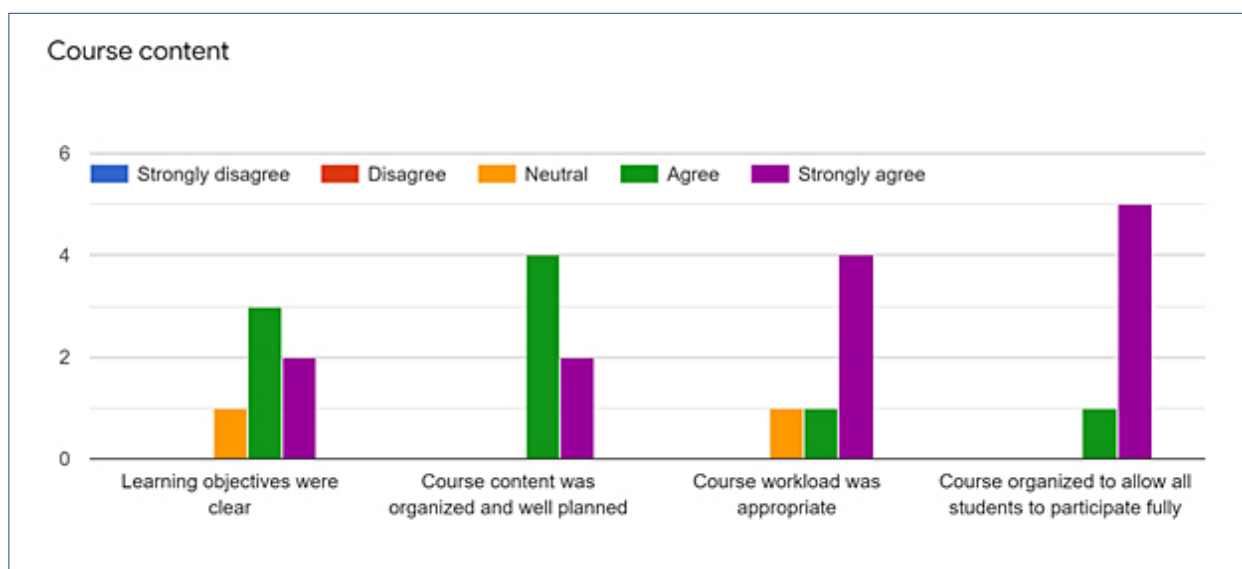

Figure 4: Student Feedback on Course Content

In an independent survey commissioned by the school, conducted by Pivot Professional Learning, students gave feedback on their learning experience. It draws on 845 student responses and uses a sliding scale where "1" indicates that the student strongly disagrees with the statement, while "5" indicates that the students strongly agrees with the statement. In the graph below, the responses are across four subject areas I teach, and of that mix, 13 economics students indicated they agree that "*this teacher makes what we are learning interesting*". This average for economics is also higher than the school average. It is a reliable indicator of students' impression of economics as interesting. Other key data included a score of 4.6 (out of a possible 5) for "*This teacher pushes me to think instead of just giving me the answers*" and "*This teacher asks me to explain my answers - why I think what I think*". Both questions reflect the students' recognition of the importance of meta-cognitive strategies, challenging them to think deeply which underpins the organisation and learning approach in the course design.
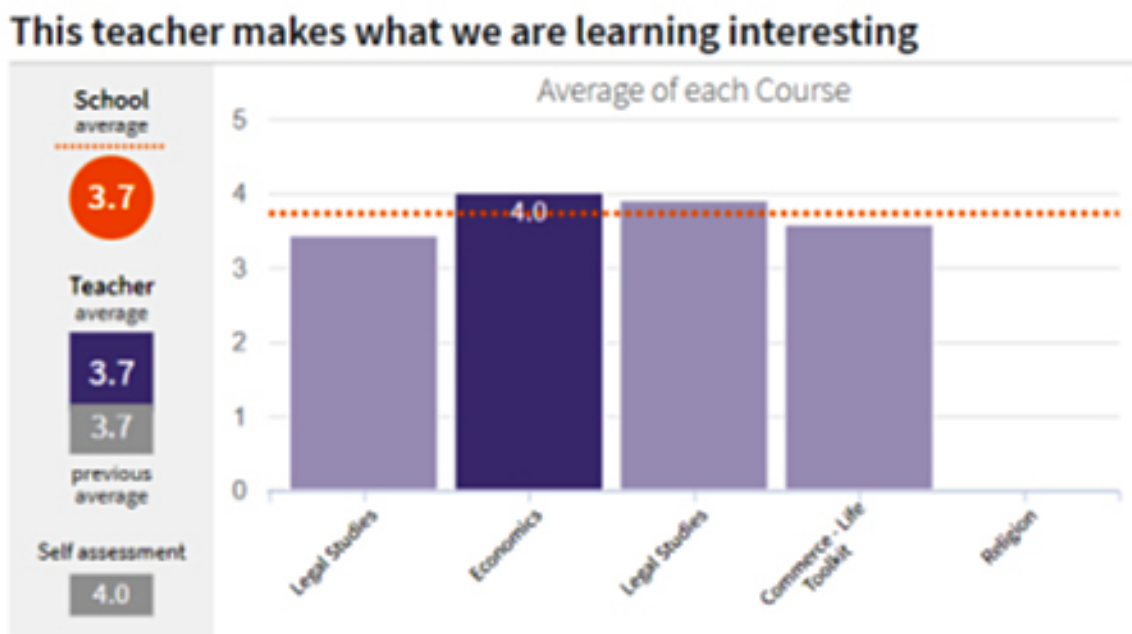

Figure 5: Selected Data from Pivot Professional Learning School Survey

Discussion

Game theory has broken new ground for economics, opening ways to make real-world predictions based on incentives. John Nash was awarded the Nobel prize in economics in 1994 for his contributions to game theory. The Nash equilibrium, also known as the prisoner's dilemma, recognised "how self-improving individuals could lead to self-harming crowds" (The Economist, 2017, p. 12). The figure below outlines the decision matrix for two individuals, Prisoner A and Prisoner B, and the likely pay-offs from a confession or to keep quiet after being arrested.

Figure 6: The Prisoners' Dilemma (The Economist, 2017, p. 12)

Individuals can gain by competing for the HSC but according to game theory, a more desirable option would see a cooperative strategy that would deliver greater gains for the group that outstrips individual contributions. In 1991, economics was the one of the three most popular subjects in the HSC. In 2020 there were around 77 000 students sitting their HSC. 5072 students sat the Economics examination (NESA, 2020). They are most likely to be male, from a selective school and from a home where both parents have a tertiary education and higher than average income (Dwyer, 2018). This competitive dilemma makes us all prisoners when wealth and influence continue to be concentrated and tightly held.

The student voice in the findings is strong and they tell us they are personally engaged, interested, and motivated to continue studying economics. The average mark overall for students in the group sits at 65% which is indicative of a standardised distribution, but more important is the understanding they have gained through their engagement in the study. The course design has created a truthful and productive dynamic which will serve to empower students in the HSC competitive dynamic and the students' need for economic literacy. Barney's comment (one of the students undertaking the newly designed preliminary economics course) sums up his and other's appreciation of this balance.
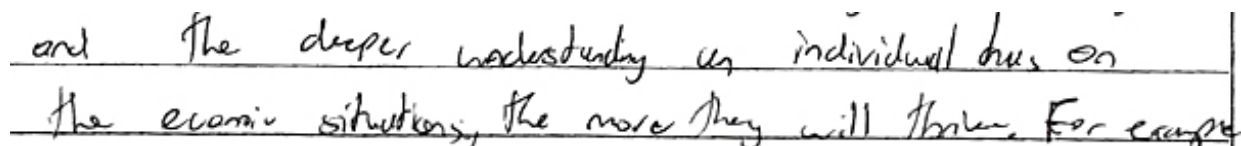

Figure 7: Barney's comment (2020) " ...and the deeper understanding an individual has on economic situations, the more they will thrive ...".

Conclusion

Given the findings, this new twist on the preliminary economics course has captured student interest and motivated the cohort to engage and invest in an economic understanding. After a hiatus of student enrolments in economics, a new cohort has enrolled as more students become interested and connected with the big picture emphasis of wellbeing in the new course design. Through the strategic patterning and deliberate emphasis on knowledge-making, students' academic self-concept is growing and their sense of belonging deepening.

It is exciting to see this revival of interest and hopeful optimism as the students begin to appreciate they can make informed choices and critical evaluations and that this new knowledge has become powerful in their hands. The HSC was not designed to encourage the narrowness of learning that we have experienced and similarly the economics curriculum documents do not bar entry to students who are poor, disadvantaged and marginalised by distance and influential institutions. But the regulatory impost of a competitive dynamic has surrendered its sense of justice for some students, regional students especially have become the collateral damage of this dynamic. In the end, it is ultimately the teachers who have to contextualise and mould the curriculum for their students, and perhaps models like this can open that dialogue for teachers to feel empowered and set in motion a renewal for economics.

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