

Transport as a context for encouraging skilled and active citizenship

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Published November 2014, www.education.nzta.govt.nz

Abstract

The safe road system is used as a context for active citizenship in the NZ Transport Agency's road safety education resources. With their 'strengths-based' approach to road safety education, these curriculum resources engage young people in thinking and acting together to find and manage opportunities and challenges for roads and road users in their local communities. A key aspect of their design is that these resources can be embedded in the day-to-day work of teachers in schools. Recognising students as citizens and schools as knowledge producers for local communities, the resources provide flexible and adaptive ways for students to think and act in their community, prompting their democratic imaginings and agency as road users. This paper summarises the thinking behind design for pedagogy that matters.

Key words: Citizenship, citizens, road safety education, learning design, NZ Transport Agency

Introduction

When young people think critically about how safe road use intersects with both their lives and society as a whole, they are considering what it is to be an engaged citizen in a changing world. When teachers adapt road safety education to fit the day-to-day world of their students, it gives young people opportunity to develop their own ideas and to participate in the process of solving problems. This gives them the skills to participate more actively as citizens. Andrea Milligan, Victoria University of Wellington

Any action that makes a positive difference to the common good can be construed as an act of citizenship. Enabling students to think critically about their own lives and society as a

whole is a powerful way of making citizenship visible to them. To develop what Hayward (2012) refers to as a democratic imagination, motivation and involvement, students need a context where they have a voice and feel like they belong, matter and can make a difference. A context where they can value, and act in ways that promote community and participation for the common good. A context where they can experience agency and demonstrate the rights and responsibilities they have as citizens.

The NZ Transport Agency's (Transport Agency) road safety education resources are designed to enable students' agency as active citizens so that they actively contribute to a safe road network (Chamberlain 2013). Students are encouraged to seek community-based solutions to help road users experience safer journeys. This focus aligns with the New

Zealand Curriculum (NZC) vision ‘for young people to be active participants in a range of life contexts (and) contributors to the well-being of New Zealand ...’ (Ministry of Education 2007, p. 8).

In essence, the resources are effective because, guided by recent research findings on how young people learn (Alton-Lee 2003; Hattie 2012), they are designed to: ensure relevance to motivate and engage; create dissonance and develop deep knowledge; and develop competencies for decision making and taking action (Chamberlain and Hook 2013). Furthermore, because they are linked to the New Zealand Curriculum and can be embedded in the day-to-day work of teachers in schools, the learning experiences are valued as pedagogy that matters and core business, rather than framed as an optional extra.

Why we don't do disasters

The Transport Agency adopts a ‘strengths-based’ approach to the knowledge, skills, attitudes and behaviours that students require if they are to demonstrate skilled and active citizenship in a safe road system. It assumes that every student has resources that can be used to imagine and manage safe outcomes for themselves and others as pedestrians, cyclists, passengers and drivers using the road network. The alternatives – all those one-off events, fear-based approaches, and activities that focus narrowly on improving specific knowledge and skills – are less effective. For example, arousing fear appears to be less critical than helping young people understand how they are vulnerable and then learning coping strategies to stay safe. (Lewis, Watson, Tay and White 2007).

The New Zealand Government’s safe system approach offers educators a much broader contemporary social issue for learning about,

for and with citizenship. It can be used to make citizenship visible and to encourage students to work together in skilled and active ways to achieve safer journeys for all road users. In this way the safe system engages students in thinking about and acting for citizenship.

When the road is framed as a commons, it becomes a shared place we cannot exclude people from using, a common good. Using the concept of sharing a ‘commons’ encourages students to develop deeper and more flexible perspectives of citizenship than they would if we described the road as a resource. The big idea for students is that all people using our roads are precious so we need to think and act together as citizens to create a safe road system to keep all road users safe. The Transport Agency resources prompt students to look beyond their personal needs as citizens and road users and to imagine the ‘pluralism and diversity’ (Kymlicka 1995) in the needs of schools, homes and the community for safe journeys on the road network.

In the Transport Agency resources, students are encouraged to collaborate over time to:

- **help** make the road network a place where mistakes are survivable (build a safe road system);
- **strengthen** all parts of the system: safe roads and roadsides, safe speeds, safe vehicles and safe road use (better road safe communities); and ultimately
- **develop** democratic imagination (Hayward 2012), motivation and involvement that go beyond the road system (boost active citizenship).

What does ‘exploring issues’ of citizenship really mean?

‘Exploring issues’ of citizenship is a ‘significant future-focused issue’ for New Zealand schools (refer New Zealand Curriculum Principle:

Future Focus in Ministry of Education, 2007). However, it is left to schools to decide what 'exploring issues' means. For some, it means preparing students for some future role as active citizens by describing citizenship, legal rights and political order (a declarative knowledge outcome). For others, 'exploring issues' means providing students with direct opportunities to experience and demonstrate skilled and active citizenship (a functioning knowledge or performance outcome) so that they think and act as citizens.

Neither approach will lead to deep learning in the short term. Both require more than a one-

off event because, if learning outcomes are to be achieved effectively, it is necessary to have learning experiences that bring in ideas, relate ideas and then extend ideas (constructive alignment using SOLO Taxonomy; Biggs and Collis 1982). Learning that 'sticks' takes time.

Exploring issues also involves clarifying terms. In this sense, classifying the types of active citizenship is useful to resource design by helping to clarify the outcome we are promoting (refer Figure 1).

Figure 1: What kinds of citizens do we want?



Source: Adapted from the work of Westheimer and Kahne
<http://democraticdialogue.com/DDpdfs/WhatKindOfCitizenAERJ.pdf>

Once the categories of citizenship have been established, the resources can be designed to enable students to describe, experience and demonstrate personally responsible,

participatory and/or justice-oriented citizenship.

If we are promoting citizenship as **personal responsibility**, we will prioritise opportunities

for students to learn about (and act with) responsibility and good character – to make wise choices and act for the common good for safer journeys on the road network. If we see citizenship as **collaboration and participation for the greater good**, we will encourage students to find out about how government agencies work and take an active role in school, community and local government organisations working for safer journeys on the road network. If we believe active citizenship is about **justice**, we will use ‘pedagogical activism’ (Kerr 2014) to provide opportunities for students to find out about and seek equity and moral rightness for road users even if this means disrupting established institutions and processes.

Why is thinking about the road as a commons a ‘good thing’?

The extensive and varied pool of Transport Agency curriculum resources demonstrates that the New Zealand Government’s safe road system provides a rich context for exploring skilled and active personal, participatory and justice-oriented citizenship. When students think of the road as a ‘commons’ – a shared place where everyone understands and follows rules and expectations, and where everyone responds appropriately to enable all citizens to have safer journeys – then they have an authentic model for citizenship that is already deeply embedded in their own experience; they have agency.

Students of all ages understand that, when we share something with others, it affects what those others can do. Everyone who has ever shared a pizza therefore has something to contribute to a discussion on the road as a commons. Because every student is a road user – a pedestrian, cyclist, passenger or driver – they can come up with examples from their own lives that affirm we need to share the roads in ways that are fair; in ways that do not spoil the safe road system for others.

It is a small step from this understanding to designing learning experiences that suggest we need to work together to keep everyone safe when they use the roads. In a similar way the Official New Zealand Road Code and the Official New Zealand Code for Cyclists can be introduced as sets of guidelines and rules on how to be active citizens in working together for safer journeys.

So what is the ‘Safer Journeys Road Safety Strategy’?

The New Zealand Government’s [Safer Journeys Road Safety Strategy](#) is aimed at making a safe road system for every person using the roads. The Safer Journeys strategy is based on four principles, which provide valuable sub-contexts to learn about, with and for citizenship (refer Table 1).

Table 1: Design matrix for learning experiences in a citizenship curriculum based on the Safer Journeys strategy

Principle	Sub-contexts for exploring this principle	Individual, participatory and/or justice-oriented citizenship outcomes
1. Human beings make mistakes and crashes are	<ul style="list-style-type: none"> Describing, explaining, analysing and evaluating the mistakes that 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship

inevitable	make crashes inevitable	perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Exploring ways to manage the frequency of these mistakes 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Demonstrating strategies for working together to manage mistakes 	<input type="checkbox"/> Individual citizenship perspective
<input type="checkbox"/> Participatory citizenship perspective		
<input type="checkbox"/> Justice-oriented citizenship perspective		
2. The human body has a limited ability to withstand crash forces	<ul style="list-style-type: none"> Describing, explaining, analysing and evaluating crash forces and how they impact on the human body 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Exploring ways to manage forces acting on the human body as a result of a crash 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Demonstrating strategies for working together to manage the forces experienced in crashes 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
3. System designers and road users must	<ul style="list-style-type: none"> Describing, explaining, analysing and evaluating the design of local 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship

all share responsibility for managing crash forces to levels that do not result in death or serious injury	road systems for road users	perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Exploring ways in which system designers and road users can work together to better manage crash forces 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Demonstrating strategies for road users and system designers to work together to better manage crash forces 	<input type="checkbox"/> Individual citizenship perspective
<input type="checkbox"/> Participatory citizenship perspective		
<input type="checkbox"/> Justice-oriented citizenship perspective		
4. It will take a whole-of-system approach to implement the Safe System in New Zealand	<ul style="list-style-type: none"> Describing, explaining, analysing and evaluating the whole-of-system approach 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Exploring ways in which we can work together to strengthen all parts of the system: safe roads and roadsides, safe speeds, safe vehicles and safe road use 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective
	<ul style="list-style-type: none"> Demonstrating strategies for working together in a whole-of-system approach 	<input type="checkbox"/> Individual citizenship perspective
		<input type="checkbox"/> Participatory citizenship perspective
		<input type="checkbox"/> Justice-oriented citizenship perspective

Why should we bother about the espoused and enacted curriculum for citizenship?

We are completing a 5 month review of the school vision, mission, strategic thinking and values which has been a mammoth piece of work. Citizenship came up again and again and we have concluded it needs to be formally taught not absorbed by accident so the SOLO approach would work in well. New Zealand primary school principal in response to a presentation on the NZTA curriculum resources at ULearn14

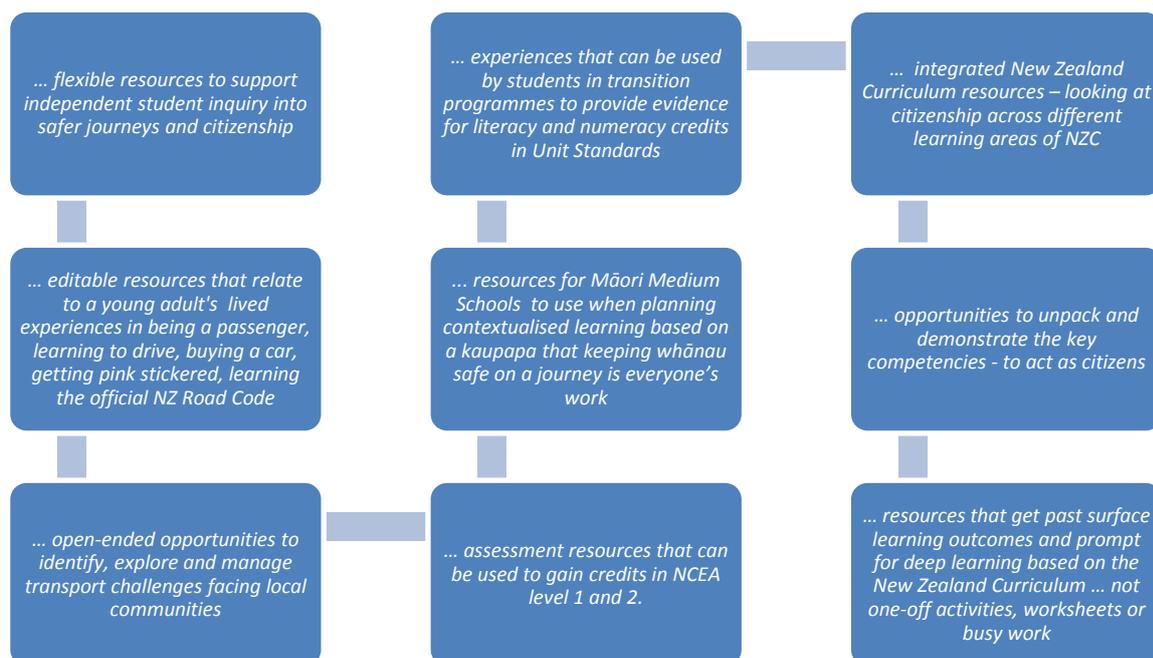
Espoused and enacted curriculum practices often diverge from one another; teaching about, for and with citizenship is no exception. The reasons given for such differences are usually temporal, ranging from working with an 'overcrowded curriculum', to

pressure to focus on external examinations, to lack of resources, interest and knowledge (Ministry of Transport 2010). Therefore, curriculum delivery in classrooms can show: limited or no teaching and learning for active citizenship; indirect or opportunistic teaching and learning; or direct and planned teaching and learning for active citizenship.

The Transport Agency curriculum design process includes regular reference group meetings to ensure primary and secondary educators (teachers and principals) identify barriers to direct and planned teaching for safer journeys and citizenship, and suggest ways to manage them so that these barriers can be directly addressed when the resources are designed.

For example, Figure 2 presents some of the Transport Agency reference group responses that helped to shape the design of the most recent Transport Agency resources.

Figure 2: Responses from Transport Agency reference group that contributed to design of NZTA resources



Is citizenship bigger than the social sciences?

The Transport Agency curriculum resource overview (refer Figure 3) shows the NZC is both adaptive and responsive when thinking about citizenship. It shows that, although primary and secondary schools commonly use the NZC Social Sciences learning area (and/or the key competencies), issues of active citizenship can be explored, experienced and demonstrated at any level including the National Certificate of Educational

Achievement (NCEA) Levels 1 and 2, and for any key competency, to exercise any value and through any learning area. Appendix A shows a breakdown of the individual, participatory and justice-oriented focus, levels and internal assessment resources, approved by the New Zealand Qualifications Authority (NZQA for NCEA), that are available in the Transport Agency secondary curriculum resources.

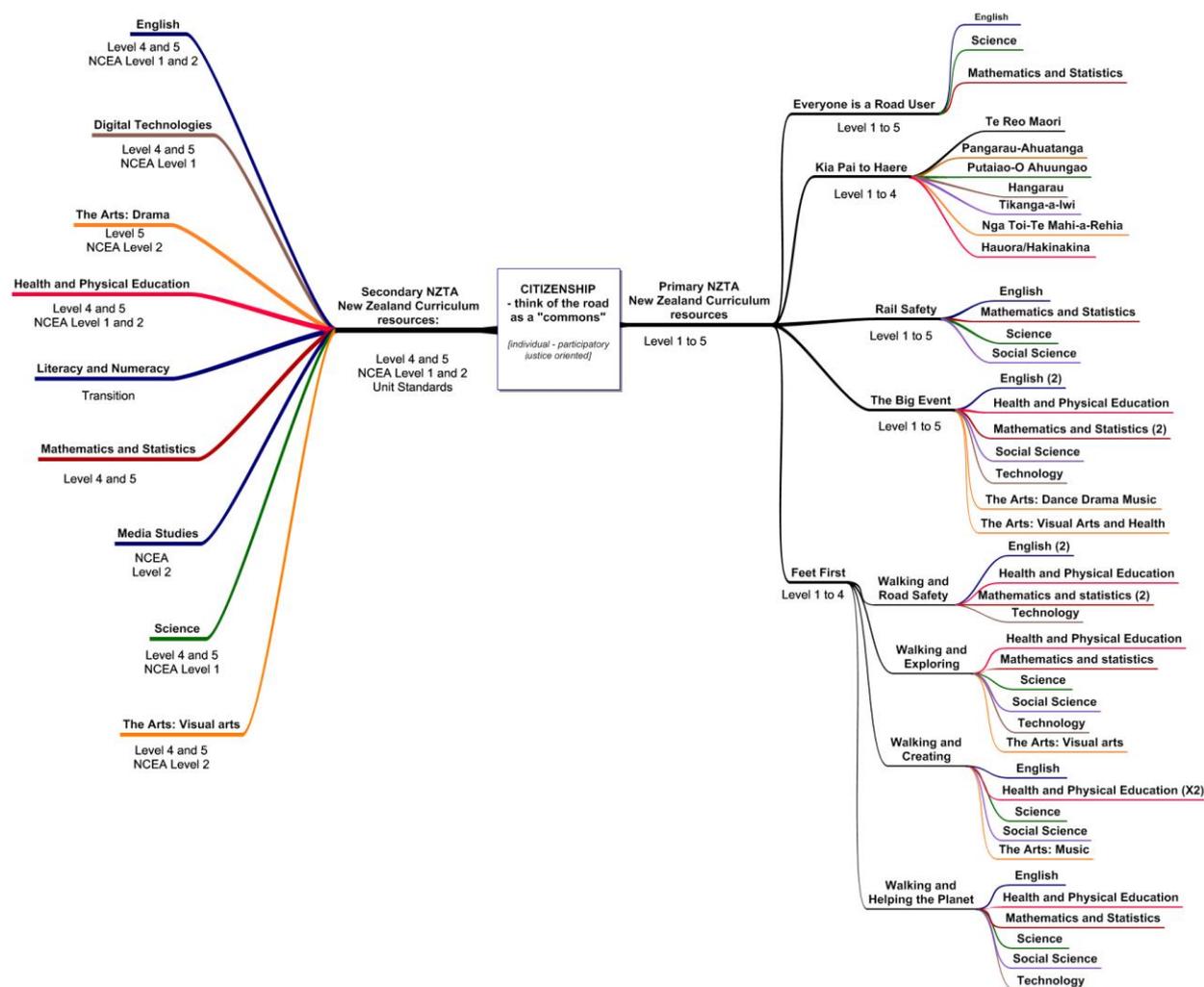


Figure 3: NZTA curriculum resource overview

Source: Based on NZTA curriculum resources currently online at: <https://education.nzta.govt.nz/resources>

Alignment is tempting - when is it a mistake?

It may seem tempting to align the type of citizenship with curriculum levels so that:

- **issues of personal responsibility** are explored in junior primary, e.g. Level 1 Health and Physical Education: Identity, sensitivity and respect. Demonstrate respect through sharing and co-operation in groups;
- **issues of participatory citizenship** are explored in middle school, e.g. Level 4 Science: Nature of Science: Participating and contributing. Explore various aspects

of an issue and make decisions about possible actions;

- **issues of justice** are explored in senior secondary e.g. Social Sciences AS91042 Report on personal involvement in a social justice and human rights action.

However, as Table 2 below demonstrates, this approach is likely to be unnecessarily limiting. Learners of all ages are enriched when they can explore citizenship in personally responsible, participatory and justice-oriented ways.

Table 2: Examples of student action across different citizenship types

	Personally responsible citizen	Participatory citizen	Justice-oriented citizen
Primary school student	Acts responsibly when walking to school.	Helps organise a class buddy system for new students walking to school for the first time.	Explores why we need “buddy system” to make sure other students have safe journeys on the local road network and takes action to change this.
Middle school student	Acts responsibly when waiting for and using school buses.	Joins the school council and lobbies for improved supervision and monitoring of student behaviour on school buses.	Explores why we need to supervise student behaviour when they are using school buses and takes some action to change the underlying cause.
Secondary school student	Adopts a ‘sort it and report it’ approach to unsafe road use by other students and/or members of the local community.	Contributes to a student-led social media campaign to persuade young people to commit to ‘no compromises’ when it comes to road safety.	Explores why young people are over-represented in road crash statistics in the local community and takes some action to change systems or structures that contribute to this.

In response to the reference group’s ‘what educators need’ criteria, the Transport Agency curriculum resource design includes direct teaching and learning experiences for learning

about, for and/or with citizenship. Each priority requires a shift in pedagogical design and approach. SOLO Taxonomy is used in the learning design to ensure the resources not

only bring in ideas about safer journeys but also enable students to make connections that lead to the deep understanding they need to experience and demonstrate skilled and active citizenship on and around the road network.

One priority in the Transport Agency resources is teaching **about** personal, participatory or justice-oriented citizenship (declarative knowledge):

- **describing** acts of citizenship (What does acting for the common good – an act of citizenship – look like in the context of safer journeys for a personal, participatory or justice-oriented citizen?);
- **explaining** the techniques of citizenship (How can we/students act for the common good in ways that demonstrate personal, participatory or justice-oriented citizenship in the context of safer journeys?);
- **explaining** the purposes of citizenship (Why should we/students act for the common good – demonstrate acts of personal, participatory or justice-oriented citizenship in the context of safer journeys?).

Another priority is teaching **with** personal, participatory or justice-oriented citizenship (functioning knowledge):

- **working** for the common good – students taking action as citizens in the context of safer journeys (Doing citizenship. How can students act for the common good – experience and demonstrate skilled and active personal, participatory or justice-oriented citizenship - in their everyday lives and in their communities? What does this look like? What does it require? How can they justify acting in this way?).

What happens when you remix citizenship with SOLO Taxonomy and knowledge production?

The Transport Agency uses SOLO Taxonomy (Biggs and Collis 1982; Hook and Mills 2011, 2012) to create environments and structures for learning that support working for the “common good”.. The design scaffolds students’ learning with others to find and manage problems for citizens in their local community. When SOLO is used to make the level of complexity of learning tasks and success criteria visible to students, it builds versatility and autonomy. In an act of pedagogical activism, it helps prepare students for more challenging, self-directed, collaborative research and knowledge production when they tussle with ‘wicked problems’ for safer journeys in their local communities.

However, expecting students to engage in active citizenship by exploring ‘problems’ requires something more than creating a desire to find a ‘solution’.

If we wish to help students take responsibility for the common good, we must imagine and then create structures, systems and opportunities for them to do this. We should ensure the problem (or challenge) provides opportunities for sustained and active citizenship; that it has the potential to move students past the honeymoon period of initial engagement into behaviours where enhancing the common good becomes ‘the way we do things around here’. We must address barriers that may frustrate their initial efforts to engage with the cause they identify.

Forget flipping the classroom, many of the Transport Agency curriculum resources flip the way we think about the whole purpose of school. Instead of viewing school as a place where ‘knowledge is built’ from what we

already know, the Transport Agency resources re-imagine school using pedagogical activism as a place where students can work together to ‘produce knowledge’¹ for road users in local communities.

Exploring ‘wicked problems’², ‘conflicting certitudes’ and ‘clumsy solutions’ for transport issues in local communities is a curriculum design that scaffolds for the pluralism and diversity that are vital to teaching for skilled and active citizenship. Through the opportunities and challenges in the Transport Agency curriculum resources, students research and then manage the ‘wicked problems’ they identify in their local communities. In this way the Transport Agency curriculum resources allow us to re-think school; to see local schools as places where the community can go to find out things about local transport and safer journeys.

Does any of it make a difference?

Finding an engaging and authentic context for exploring active citizenship is not sufficient. Neither is teaching for pedagogical activism. We can teach in ways that change students’ **knowledge** about skilled and active citizenship without in any way changing the skills they need to demonstrate citizenship. We can improve their **knowledge and skills** related to demonstrating citizenship but leave unchanged their attitude towards exercising

¹ In knowledge-producing schools (KPS), local and/or community needs are used as contexts for knowledge producing (Bigum 2004).

² In *Key Competencies for the Future*, Hipkins, Bolstad, Boyd and McDowall (2014) suggest that integrating the NZC key competencies and learning areas to explore “wicked problems” can provide powerful opportunities for students to engage in collective action and demonstrate active citizenship while they are still at school.

those skills actively. Finally we can change the **knowledge, skills and attitudes** related to demonstrating skilled and active citizenship but fail to change student **behaviour** when an opportunity to demonstrate skilled and active citizenship arises. For example, large-scale educational initiatives designed to change ‘the way we drive our cars, eat fatty foods, avoid exercise, drink excessive alcohol and smoke cigarettes’ have been shown to be largely ineffective at changing behaviours. Indeed some interventions have been dis-benefits and exacerbated or ‘normalised’ the behaviours we would like to change (McKenna 2010).

It is not easy to measure changes in students’ learning about skilled and active citizenship. Yet without some form of assessment, we cannot determine if the Transport Agency educational approaches to exploring citizenship are effective in changing their knowledge, skills, attitudes and/or behaviours in this area.

An important part of the Transport Agency resources covers the measures to assess prior knowledge, capabilities, attitudes and behaviours and the measures that monitor and evaluate any changes that result from the teaching and learning – formative and summative outcomes.

For example, curriculum resources sometimes neglect prior knowledge. If we do not bother to assess prior knowledge, we risk teaching students what they already know or assuming understanding that does not exist.

- What prior knowledge do students have about citizenship and collaborating for the common good?
- What prior skills or capabilities do students have to demonstrate citizenship and collaborating for the common good?

- What pre-existing attitudes do students hold about citizenship and collaborating for the common good?
- What pre-existing behaviours do students demonstrate for skilled and active citizenship and collaborating for the common good?

And in terms of these pre-existing behaviours:

- How frequently do students demonstrate these behaviours?
- How flexibly do students demonstrate these behaviours?
- How sustainable is the demonstration of these behaviours (in the short, medium and long term)?

It is a compulsory feature of all Transport Agency resources that they provide instruments for assessment. These instruments include self-reporting on prior knowledge, capabilities, attitudes and behaviours; various formative assessment measures based on SOLO-differentiated outcomes; and other formative and summative assessments focused on opportunities to exercise and strengthen the key competencies. Examples of summative assessment are seen in the exemplars and tasks in Transport Agency secondary

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resources based on the internal assessment resources for NCEA Levels 1 and 2.

Conclusion

This paper has illustrated how the New Zealand Government's 'safe road system' provides a context for designing learning for skilled and active citizenship. Road safety education and building democratic imagination matter. Also important are our efforts to improve student knowledge, capabilities, attitudes and behaviours to achieve safer journeys for all road users.

The high-quality, editable and downloadable Transport Agency resources save teachers' time and strengthen their planning. The various units of work and assessment resources are available for free download at www.education.nzta.govt.nz

By using these resources your students can become confident, connected and actively involved in their local communities. In exercising creativity, energy and enterprise in their subject learning they can develop a democratic imagination and agency that will go well beyond the road system and may well help secure a sustainable social, cultural, economic and environmental future.

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Appendix A: Overview of the Transport Agency secondary road safety education curriculum resource

Transport Agency secondary NZC resources: Safer Journeys for Teens	Designed using SOLO Taxonomy: idea, ideas, relate, extend	Citizenship focus: citizenship for safer journeys	Declarative knowledge outcomes: citizenship for safer journeys	Functioning knowledge outcomes: citizenship for safer journeys	NZC Levels: <i>Levels 5 to 8</i> NCEA Levels: <i>Levels 1 and 2</i>	NZQA Achievement Standards: <i>Quality Assured Assessment Material certified by NZQA.</i> Unit Standard: <i>Learning activities provide evidence in support of Unit Standards.</i>
Digital Technologies	✓	<i>individual participatory</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience</i>	<i>Levels 4 and 5</i> <i>NCEA Level 1</i>	<i>Achievement Standard 91073: Implement basic procedures to produce a specified digital media outcome.</i>
Drama	✓	<i>individual</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience</i>	<i>Level 5</i> <i>NCEA Level 2</i>	<i>Achievement Standard 91214: Devise and perform a drama to realise an intention.</i>
English	✓	<i>individual, participatory justice-oriented</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience demonstrate</i>	<i>Levels 4 and 5</i> <i>NCEA Levels 1 and 2</i>	<i>Achievement Standard 90052: Produce creative writing.</i> <i>Achievement Standard 91107: Analyse aspects of visual and/or oral text(s) through close viewing and/or listening, supported by evidence.</i>
Health and PE	✓	<i>individual, participatory justice-oriented</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience demonstrate</i>	<i>Levels 4 and 5</i> <i>NCEA Levels 1 and 2</i>	<i>Achievement Standard 90969: Take purposeful action to assist others to participate in physical activity.</i> <i>Achievement Standard 91237: Take action to enhance an aspect of people's well-being within the school or wider community.</i>
Literacy and Numeracy [Using Official New Zealand Road Code]	✓	<i>individual, participatory justice-oriented</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience demonstrate</i>	<i>Students in transition programmes</i>	<i>Unit Standards: 26622: Write to communicate ideas for a purpose and audience; 26624: Read texts with understanding; 26625: Actively participate in spoken interactions; 26623: Use numbers to solve problems; 26626: Interpret</i>

						<i>statistical information for a purpose and 26627: Use measurement to solve problems.</i>
Mathematics: Statistics and Trigonometry	✓	<i>individual</i>	<i>describe, explain, analyse, evaluate</i>		<i>Levels 4 and 5</i>	
Media Studies	✓	<i>individual</i>	<i>describe, explain, analyse, evaluate</i>		<i>NCEA Level 2</i>	<i>Achievement Standard 91250: Demonstrate understanding of representation in the media.</i>
Science: Physics	✓	<i>individual participatory</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience</i>	<i>Levels 4 and 5</i> <i>NCEA Level 1</i>	<i>Achievement Standard 90936: Demonstrate understanding of the physics of an application.</i>
Visual Arts	✓	<i>individual participatory</i>	<i>describe, explain, analyse, evaluate</i>	<i>experience</i>	<i>Levels 4 and 5</i> <i>NCEA Level 2</i>	<i>Achievement Standard 91315: Develop ideas in a related series of drawings appropriate to established design practice.</i>

Appendix B: Secondary curriculum resources (junior and senior secondary and NCEA projects)

<http://education.nzta.govt.nz/resources/secondary>

Digital Technologies: The Digital Technologies unit aligns to the technological practice strand of the curriculum. These units provide teachers with the basis for junior secondary and NCEA projects. Junior secondary students interview stakeholders about knowledge of risks related to road use, and then create a digital media presentation to increase audience awareness of responsible road use. Lessons include brief writing, concept development, production and evaluation. The presentation could be a movie, motion graphic, animation or presentation. Technological practice gives students scope to create digital artifacts that communicate road safety messages to a target audience. Students produce an interactive graphic about road safety. It must incorporate original content, integrate at least two digital media types and use some content sourced from Transport Agency websites. They include an internal assessment resource for *Achievement Standard 91073: Implement basic procedures to produce a specified digital media outcome*. This is Quality Assured Assessment Material certified by NZQA.

Drama: Drama students gain “new power to examine attitudes, behaviours, and values” (Ministry of Education 2007). These units let students express the emotions, thoughts and action inherent in the road safety scenarios they create. They include an internal assessment resource for *Achievement Standard 91214: Devise and perform a drama to realise an intention*. This is Quality Assured Assessment Material certified by NZQA.

English: Language has the power to shape and enrich lives. Road safety is a crucial sphere of action for teenagers. Lessons using these resources involve analysing or creating texts about making the right decisions. The resources include internal assessment resources for *Achievement Standard 90052: Produce creative writing* and *Achievement Standard 91107: Analyse aspects of visual and/or oral text(s) through close viewing and/or listening, supported by evidence*. Both are Quality Assured Assessment Material certified by NZQA.

Health and PE: Healthy communities and environments include how and where we travel. These lessons get students to plan and carry out actions to make their local streets and paths safer for school events. The resources include internal assessment resources for *Achievement Standard 90969: Take purposeful action to assist others to participate in physical activity* and *Achievement Standard 91237: Take action to enhance an aspect of people’s well-being within the school or wider community*. Both are Quality Assured Assessment Material certified by NZQA.

Literacy and Numeracy: This resource has learning experiences that use the Official New Zealand Road Code to integrate learning for citizenship within broad contemporary social issues for safer journeys in New Zealand. This provides a contextualised learning programme to help students meet NZQA Literacy and Numeracy requirements. Learning experiences provide evidence for assessment for *Unit Standards: 26622: Write to communicate ideas for a purpose and audience; 26624: Read texts with understanding; 26625: Actively participate in spoken interactions; 26623: Use numbers to solve problems; 26626: Interpret statistical information for a purpose* and *26627: Use measurement to solve problems*.

Mathematics: These curriculum resources allow students to investigate road safety contexts using data sets and then draw their own conclusions. In the first statistics unit, students use the Problem, Plan, Data, Analysis and Conclusion (PPDAC) inquiry cycle to carry out a comparative investigation of stopping distances under different conditions. The second unit, Crossing the Centre Line, is based on a series of trigonometry investigations. The context is concerned with driver distractions or micro-sleeps (or zoning out) when driving. Students carry out investigations looking at the effect of factors

such as differing speeds or distraction times on the distance travelled towards the centre line if the car starts to veer towards the right at a small angle.

Media Studies: In this resource students demonstrate understanding of how road users are represented in short media texts designed to educate a target audience about keeping themselves, peers and family safe in and around cars. The resources include *Achievement Standard 91250: Demonstrate understanding of representation in the media*. This is Quality Assured Assessment Material certified by NZQA.

Science: Physics concepts and their use through technology are explored when students delve into questions such as how do we use forces to make vehicle crashes survivable? Problem solving, experiments and activities help students develop conceptual understanding of force and motion through the context of technologies used for road safety and safe stopping. The resources include an internal assessment resource for *Achievement Standard 90936: Demonstrate understanding of the physics of an application*. This is Quality Assured Assessment Material certified by NZQA.

Visual Arts: Strong design creates a memorable impression. These resources support students to use visual literacy for maximum effect when designing safe travel messages aimed at their own generation. In the first resource students explore and express concepts of personal safety and the safety of those around them as road users. This resource focuses on design practice as students create artwork for road signs or posters that is positive, light-hearted and educational. In the second resource, students complete three tasks: research; generate resource imagery for and design a website loading page; and develop typography for a home page. The content for the website will support a hypothetical advertising campaign about vehicle safety for young New Zealand drivers. The resources include an internal assessment resource for *Achievement Standard 91315: Develop ideas in a related series of drawings appropriate to established design practice*. This is Quality Assured Assessment Material certified by NZQA.

Appendix C: Primary curriculum resources

<http://education.nzta.govt.nz/resources/primary>

Everyone is a road user: This Transport Agency resource encourages primary and intermediate school students to act as citizens, to find the ‘wicked problems’ around safer journeys for road users in their local community and to actively listen to the different perspectives on how these problems might be fixed. It prompts students and schools to work with others, to see the “wicked problems” for safer journeys as community challenges (problems and opportunities), and to seek community-based “clumsy solutions” that will increase the likelihood that road users will experience safer journeys. Finally the resource encourages schools to become knowledge producers for their local communities – collecting, creating and curating stories about how they and others ensure safer journeys on their local road networks for pedestrians, cyclists and passengers. The resource contains a “wicked problem” investigation and 18 differentiated learning activities/experiences to meet curriculum expectations in English, Maths and Statistics, and Science in Year 1 to Year 8.

Kia Pai Tō Haere: This flexible curriculum resource for Māori Medium Schools provides guidance for teachers planning contextualised learning based on a kaupapa that keeping whānau safe on a journey is everyone’s work. The resource is designed using SOLO Taxonomy, Te Marautanga o Aotearoa and Te Aho Matua. It develops, connects and extends students’ understanding so that they can create actions (or resources) that will help keep our people safe on a journey within the wider road network. Learning areas: Te Reo Māori; Pāngarau –Āhuetanga (Maths); Pūtaiao- O Ahupūngao (Science); Hangarau (Technology); Tikanga-ā-Iwi (Social Sciences); Ngā Toi- Te Mahi-ā-Rēhia (Arts); and Hauora/Hākinakina – Waiaora (Health). (Levels 1 to 4).

The Big Event: New Zealand Curriculum Levels 1 to 5 resources designed to help teachers plan lessons on organising safe travel to a big event. Each resource is based on a challenge that students work together to complete. Learning area challenges include:

- *Arts, Dance, Drama, and Music:* Collaborate to create dance/music/dramatic performances or costumes that tell visitors that when you travel smart, you travel safely.
- *Arts and Health:* Collaborate to design a road sign or a series of E-road signs about smart and safe travel.
- *English: Persuasive:* Collaborate to persuade visitors about why they should travel smart and stay safe when visiting a city during a big event.
- *English: Procedural:* Collaborate to write safe travel guidelines for visitors to New Zealand.
- *Health and Physical Education:* Collaborate to create a risk management plan and manual for smart travel behaviour.
- *Mathematics and Statistics: Statistics:* Collaborate to use statistics to investigate a road you use and care about.
- *Mathematics and Statistics: Geometry and Measurement:* Collaborate to create a road map to help tourists travel smartly and safely.
- *Science:* Collaborate to create a safe travel kit to explore natural and man-made features of an area.
- *Social Sciences:* Make a collaborative, safe travel resource for footpath adventurers.
- *Technology:* Collaborate to design and prototype a mode of transport for safe travel to a big event.

Feet First: These Safe Active Travel curriculum resources connect students to the people, places and environments around them, and encourage them to be actively involved participants in and contributors to the well-being of their communities and environments. The New Zealand Curriculum

Levels 1 to 5 resources include teacher-directed and student inquiry grouped under the following categories:

- **Walking and Road Safety:** Safe active travel resources from New Zealand Curriculum learning areas:
 - English – Road safety and writing explanations: Create a piece of explanation writing using road safety as your theme.
 - Health and Physical Education – Road safety and communities: Create an individual safety management plan depending on how students get to school.
 - Mathematics and Statistics – Statistics – Road safety – A statistical investigation: Lesson ideas for collecting and displaying road safety data.
 - English – Road safety and visual language: Create your static image to communicate the idea of road safety.
 - Mathematics and Statistics – Geometry – Road safety and geometry of road signs: Students use online tools to plan a route the class will walk around so that students can identify different road signs.
 - Technology – Road safety and making child pedestrians visible: Design technology to improve the visibility of children walking near roads.

- **Walking and Exploring:** Safe active travel resources from New Zealand Curriculum learning areas:
 - The Arts – Visual Art – Exploring pavement art: Develop visual ideas in response to walking in different environments, and the work of pavement artists.
 - Mathematics and Statistics – Exploring how far it is: Map and measure walking routes.
 - Health and Physical Education – Exploring safe walking: Describe contexts for walking where you will need to make safe choices.
 - Science – Exploring living things and habitats: Describe and sequence changes to a natural environment.
 - Social Science – Exploring people and places: Create an online resource where you can share an identified place (a natural or man-made feature) you walk past in your local area.
 - Technology – Exploring walking surfaces: Focus on transforming walkways by developing feasible outcomes.

- **Walking and Creating:** Safe active travel resources from New Zealand Curriculum learning areas:
 - Social Science – Creating new places: Identify and map the changes in a local place you walk through.
 - Science – Creating sustainable environments: Create resources that map natural resources in your local area.
 - Health and Physical Education – Creating a healthier me: Create a class walking programme.
 - Health and Physical Education – Creating relationships when walking: Describe and explain the relationships formed with people with whom you walk.
 - The Arts – Music – Creating music from sounds heard when walking: Take a sound walk in the local environment, record and represent the sounds heard.
 - English – Creating new text when walking: Create poems.

- **Walking and Helping the Planet:** Safe active travel resources from New Zealand Curriculum learning areas:

- Technology – Helping the planet walking with young children: Transform transport by making it easier for people to walk with young children in your area.
- Social Science – Helping the planet the way we travel: Identify the ways people travelled in your local area in the past.
- Science – Helping the planet walking for clean air and water: Explore how human action affects natural features and resources.
- Maths and Statistics – Helping the planet statistical investigation: Can we help the planet by using statistics to investigate travelling to school?
- Health and Physical Education – Helping the planet communities walking: Implement a collective action to meet the care and needs of people in an identified environment.
- English – Helping the planet through argument writing: Argument writing about walking.

Rail Safety: These New Zealand Curriculum resources support primary students learning to stay safe near railways, especially the electrified rail networks being established in Auckland, and already in place in Wellington. Resources include the NZC learning areas of English, Mathematics, Science and Social Sciences. Key questions and concepts include:

- What is worth knowing and doing as a citizen around places on the electrified rail network?
- When you are a citizen you belong, you matter and you make a difference.
- Citizens work together to create safe journeys for everyone around the electrified rail network.