# Geography field trips: Why getting dirty matters

TEACH[R]

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## Abstract

**Geography, as taught in schools, traditionally engages students in field trips which have a 'hands-on' approach towards exploring the physical and human environment. However, there is a trend towards running virtual field trips as sophisticated technologies enable more realistic on-line experiences. This investigation explores past and current literature about field trips and evaluates them against the aims of the Australian Geography Curriculum. The literature reveals that virtual field trips have the potential to offer equal and sometimes superior opportunities to meet the curriculum aims relating to knowledge and understanding. The literature however suggests that on-site field trips potentially offer a stronger emotional connection that may lead to realising the aims of respect, tolerance and informed and active citizenship beyond the classroom.**

*Prologue*

*The teacher is trying to talk. Her notes flap wildly as a strong onshore wind picks up the sound of her voice and carries it away from her Year 8 class. A small group of students are drawing diagrams of sand dunes; others bend over a tussock of dune grass, taking photographs. To one side, some students are kicking up sand and watching with glee as the wind whips it in the direction of their unsuspecting peers. Others huddle like small birds on the sand, seeking refuge from the elements and intermittently uttering pathetic noises of complaint. The teacher's goal in all this chaos: to teach her class about coastal landscapes, equip them with practical geography skills, and inspire them to be good environmental stewards. She also aims to build an understanding of the connection of Aboriginal people to this coastal region. On arrival back at school, she seeks refuge in the staffroom to ponder the field trip's value in terms of student learning. She wonders if the physical, emotional and mental energy required to run this type of field trip is worth the effort.*

## Introduction

Geography encompasses the study of space, place, environments, humanity and their interconnection and includes learning about the physical features of the earth and atmosphere. The human aspect of Geography includes population distribution, the use of resources and associated economic activities and political activities. Geography also explores sustainability and scale and how humans respond to change.

The rationale for the Australian Geography Curriculum (Australian Curriculum, Assessment and Reporting Authority, [ACARA], 2016) states, "in a world of increasing global integration and international mobility, it is critical to the wellbeing and sustainability of the environment and society that young Australians develop a holistic understanding of the world" (p. 10). This goal requires in-depth knowledge and understanding of environments and how people relate to them. Kersky (2012) makes the pertinent point that Geography "is a fundamental tool that can help us understand and solve problems related to those issues" (p. 65) of interconnectedness.

This investigation addresses the efficacy of field trips in helping to meet the aims of the Australian Geography Curriculum by examining the scholarly literature that has been steadily accumulating on this topic. Two broad categories of field trips exist. The

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first is on-site field trips (OFTs). These field trips are any "activity involving observation and recording of information outside a classroom" (ACARA, 2016b, p. 63). Fieldwork may occur in the school grounds, at a local site, or further afield. Students get 'dirty' as they engage in a 'hands-on' approach to learning. The second type of field trip is the virtual field trip (VFT). The advance of technology has led to the creation of VFTs: journeys of discovery with the same purpose as OFTs, except they rely on technology for their facilitation and are experienced by the students and teachers without leaving the classroom.

Field trips have traditionally played an important role in teaching Geography and are a mandatory component of the Australian Geography Curriculum. However, with increasing options that VFTs offer, balanced against the logistical challenges of running OFTs (Barton, 2017; Klem & Tuthill, 2002; LaVelle, 2017; Lisichenko, 2015), many schools are opting for the more manageable alternative. While evaluative comparisons between VFTs and OFTs have been made as far back as when virtual field trip software made its debut onto the education market (Çalişkan, 2011), this article specifically evaluates both virtual and on-site field trips against the aims of the Australian Geography Curriculum. In a day and age where time is precious, budgets are tight, risk assessments are mandatory, social distancing applies and travel may be restricted, VFTs may be seen as a safer, less expensive and more efficient option than OFTs, leading to the question: Is there a need for OFTs, or will VFTs suffice?

*"this article specifically evaluates both virtual and onsite field trips against the aims of the Australian Geography Curriculum"*

## Aims of Geography

As in other countries, the Australian curriculum extends beyond what happens inside a school environment. It has a broader vision that "all young Australians become confident and creative individuals, successful lifelong learners, active and informed members of the community" (Council of Australian Governments. Education Council [Council of Australian Governments. Education Council], 2019, p. 4). Of course, this vision includes ensuring that "all young Aboriginal and Torres Strait Islander (ATSI) peoples thrive in their education and all facets of life" (CAG.EC, 2019, p. 3).

The Australian Geography Curriculum (F-10) has aims that relate to all aspects of geography including developing "a deep geographical knowledge", "the ability to think geographically, using geographical concepts", and "the capacity to be competent, critical and creative users of geographical inquiry methods and skills" (ACARA, 2016a,2016b, p. 8). These three aims relate to knowledge, understanding and skill-building. Two further aims exist, the first being to ensure that students develop "a sense of wonder, curiosity and respect about places, people, cultures and environments throughout the world" (ACARA, 2016a; 2016b p. 8), inclusive of ATSI people, place and culture. This aim shifts the focus from knowledge, understanding and skills to values and attitudes, as does the final goal, "that students develop as informed, responsible and active citizens who can contribute to the development of the environmentally and economically sustainable, and socially just world" (ACARA, 2016a; 2016b p. 8). These last two goals move further than what teachers want their students to possess (knowledge, understanding and skills), to what they want their students to be (curious, respectful, informed, responsible and active citizens).

Although citizenship is more commonly associated with the study of History, Standish (2009) notes, in his evaluation of geography textbooks, that geography makes a sound contribution to citizenship education. Humans are globally connected as at no other time in history, so the teaching of Geography needs to extend to developing global citizens who are informed, responsible and active participants in their world. Citizenship develops through knowledge, understanding and empathy, which may also be outcomes of field-trips.

## The role of field trips in Geography

Traditionally, field trips involve an excursion on or off the school property to observe, question, interpret, analyse and draw conclusions about the environment. In the twenty-first century some educators claim there is little need for the traditional field trip, with VFTs and incursions overriding the need to leave the classroom.

Preston (2016), however, maintains that "geography is in a uniquely privileged position in that experiencing the world first-hand is an accepted part of geography practice" (p.19). Hutchinson (2016) agrees, adding that it "develops environmental ethics" (p. 4), while Catling (2013) cites fieldwork as a proven strategy for teaching Geography. Fieldwork is a clearly stated purpose of the Australian Geography Curriculum. There are sections in the Australian Curriculum devoted to planning Geography field trips, fieldwork in local areas, and a section on outdoor learning in Geography. The following statement in the curriculum identifies the role of outdoor learning.

> Outdoor learning programs provide opportunities for students to learn to question why the world is the way it is, reflect on their relationships with and responsibilities for that world, and propose actions designed to shape a socially just and sustainable future" (ACARA, n. d., para. 1).

The curriculum also acknowledges the

importance of 'country' to indigenous learners as students "investigate meanings and significance of places to people" (ACARA, n. d., para. 1). The inclusion of outdoor learning is clear; taking students out-of-doors to learn is one way to promote critical and creative thinking about their roles and relationship to the environment and the people who live in it. Fuller (2006), and Fagan and Sturm (2015) agree, asserting that OFTs are not only enjoyable but effective learning experiences. While VFTs cannot provide an actual out of doors experience, Klemm and Tuthill (2002) posit that VFTs offer learning experiences that are enjoyable and engaging.

The competing benefits of OFTs and VFTs prompted an investigation to determine the efficacy of each in meeting the Australian Geography Curriculum aims.

## Research method

The question prompting this investigation was:

*According to previously published research about field-trips, how effectively do OFTs and VFTs meet the aims of the Australian Geography Curriculum?*

To answer this question, the researchers used a focused literature review combined with content analysis to investigate the curriculum documents and scholarly publications relevant to the research question. The Australian Geography Curriculum: 7-10 was examined to identify the aims of Geography as taught in Australian schools. Aims for the senior years (11 and 12) were not included as they identified the same goals but with more specific application to the content. Key search words as shown in Table 1 were identified during this process.

**Table 1:** Search words used for content analysis

| Aims of ACARA Geography Curriculum | Key search words |
|---|---|
| Geographical knowledge & understanding | knowledge, understanding, content |
| Geographical skills | skills, thinking (problem-solving), planning, collecting, recording, analysing, reflecting, responding, observing, communicating, (sharing), questioning, concluding |
| Geographical attitudes & values | attitudes, values, affective, emotions, feelings |
| Citizenship | citizenship, participation, social responsibility, community |

For this focused literature review, parameters were set. Initially, only publications relating to Geography field trips in a secondary school context were identified. Research literature in this area was scant, so environmental field trips were added to the search. Finally, in order to source sufficient publications for a thorough investigation, research publications about Geography/environmental field trips in higher education and primary schools were included. The higher education publications were carefully screened to ensure that their findings were also relevant to school settings. It was also necessary to extend the publication dates to find sufficient research articles on the topic. A total of 30 scholarly publications about field-trips that satisfied the criteria were reviewed. Of these 30, ten focused on VFTs, 13 on OFTs, and seven related to both VFTs and OFTs (Table 2).

**Table 2:** Focus of field trip articles

| Focus of the Field Trip | No. of Publications |
|---|---|
| Virtual Field Trips VFTs | 10 |
| On-site Field Trips OFTs | 13 |
| Both VFTs and OFTs | 7 |
| **Total Publications reviewed** | **30** |

> *taking students out-of-doors to learn is one way to promote critical and creative thinking about their roles and relationship to the environment and ... people*

Data were extracted using content analysis (Bowen, 2009; Flick, 2019; Mackieson et al., 2019; Marshall & Rossman, 2016) by searching each scholarly publication for keywords relating to the aims of the Australian Geography Curriculum (Table 1). These words were then carefully checked in context to ensure they applied to student learning and not teacher behaviour, the research method of the publication, or some other aspect of the reported research. The content analysis process allowed the researchers to interpret and compare the efficacy of the two types of field trips in meeting the aims of the Australian Geography Curriculum. As knowledge and understanding combine to form one strand in the curriculum, and there was also generally little distinction in the field trip literature between these terms, they were amalgamated as one aim for this

investigation (Table 3).

## Results

The results of the content analysis are reported under the aims of the Australian Geography Curriculum. Table 3 indicates the number of scholarly publications that matched each aim of the Australian Geography Curriculum after content analysis was applied.

**Table 3:** Aims of the Australian Geography Curriculum and occurrence in reviewed publications

| Aims of ACARA Geography Curriculum | Fraction of reviewed publications |
|---|---|
| Geographical knowledge & understanding | 27/30 |
| Geographical skills | 27/30 |
| Geographical attitudes & values | 16/30 |
| Citizenship | 8/30 |

*"the continuing development of technology and the quality of VFTs appears to be increasing the popularity of virtual reality learning"*

### *Aims 1 and 2: Geographical knowledge and understanding*

One aim of the Australian Geography Curriculum: 7-10 is that students develop "a deep geographical knowledge of their own locality, Australia, the Asia region and the world" (ACARA, 2016a; 2016b p. 8). This includes "the ability to think geographically, using geographical concepts" (ACARA, 2016a; 2016b p. 8), to make connections between concepts, and to apply geographical knowledge to solve problems in new contexts (ACARA, 2016a,b).

Twenty-seven sources referred to knowledge and understanding in the context of field trips (Table 3). Seven of those sources compared both types of fieldwork and acknowledged the role of both VFTs and OFTs in building geographical knowledge and understanding (Table 2).

The literature identified that both VFTs and OFTs extend and enhance the geographical knowledge developed within normal classroom activities. VFTs have the abundant potential for imparting deep geographical knowledge to students as more sophisticated technology increasingly creates more realistic experiences (Lisichenko, 2015). In developing deep knowledge, VFTs have several benefits. First, VFTs make distant or difficult places accessible. Morgan (2015) makes the salient point that VFTs "expose students to places teachers cannot take them" (p. 220), something which is acknowledged elsewhere in the literature (Çalişkan, 2011; Zanetis, 2010). Secondly, VFTs offer instant access to a wide range of virtual field specimens, including those that may not be visible when on-site (Qui & Hubble, 2002). Thirdly, students engage easily with virtual reality at a meaningful level (Jacobsen et al., 2009; Klemm & Tuthill, 2002) through techniques such as immediate magnification of objects or aerial views of landscapes. Finally, experts create VFTs and often include specialists who share their knowledge via video clips. Although VFTs do not literally take students into the environment they are studying, Klemm and Tuthill (2002) point out that the quality of instruction available may make a case in favour of VFTs. Morgan (2015) agrees, noting that students enjoy many of the same advantages of an OFT through strategies like video conferencing technology and argue that it is almost the same as being on location.

While VFTs are very good at holding attention (Jacobsen et al., 2009), they have some limitations in developing in-depth geographical knowledge. The information presented represents only a snapshot in time and is static. Therefore, VFTs rarely reflect the climate, weather changes or other impacting factors, whereas OFTs are a work-in-progress that reflect the current conditions. Additionally, while an OFT may not provide the consistency of specimens to examine or weather that is conducive to completing fieldwork, these very experiences contribute to geographical knowledge by introducing the concept of unpredictability to the students. In-depth knowledge often comes from first-hand experience, which helps to bridge the gap between the theoretical learning and the real world (Balci, 2010; Gaillard & McSherry, 2014). As Klein et al., (2014) maintain, there is no substitute for immersion in real places.

The literature supports both OFTs and VFTs as valid learning experiences for meeting the aims related to geographical knowledge and understanding, although the continuing development of technology and the quality of VFTs appears to be increasing the popularity of virtual reality learning in Geography classes.

### *Aim 3: Geographical methods and skills*

The skills listed in the Australian Geography Curriculum: 7-10 fall into five main categories:

- Observing, questioning and planning
- Collecting, recording, evaluating
- Interpreting, analysing and concluding
- Communicating
- Reflecting and responding (ACARA, 2016a;

2016b p. 12)

Twenty-seven sources made reference to geographical skills in the context of field trips (Table 3). Of these sources, four of the ten that referenced VFTs made only generic comments about geographical skill building (Klemm & Tuthill, 2002; Çaliskan, 2011; La Velle; 2005; Qui & Hubble. 2002), and focused more on the logistics of VFTs. Elaboration on geographical skills and how they could be enhanced was much more robust in those articles focused on OFTs. Three articles advocated a hybrid approach, using OFTs and VFT's to complement each other (Harrington, 2009; Klemm & Tuthill, 2002; Lisichenko, 2015), while those articles more focused on OFTs gave more elaboration on the types of geographical skills that OFTs could develop.

'Thinking skills' was a common theme across the identified publications, with 20 out of 26 sources highlighting the importance of thinking as a geographical skill. Six sources specifically elaborated on critical thinking (Friess et al., 2016; Holton, 2017; Hope, 2009; Morgan, 2015; Simm & Marvel, 2015; Leydon & Turner, 2013). Observing, collecting, and recording featured more frequently in articles on OFTs than VFTs, while Jacobsen et al. (2009) claim that although VFTs do provide limited observation, they are superior for observing specific field samples. Reflecting and responding as geographical skills were identified in both types of field trips, although the skill of questioning featured more during OFTs. The skill of communication featured in articles about both OFTs and VFTs.

The focused literature review also revealed that field trips cater for two levels of student engagement: observational and participatory (Friess et al., 2016). If students are to learn skills, field trips where they are required to participate, rather than merely observe, are desirable. Preston (2016) and Lisichenko (2015) maintain that students on OFTs become active participants by engaging in the physical environment they are studying. Other researchers claim that VFTs, through their engaging activities in virtual reality, are also participatory (Qui & Hubble, 2002; Çaliskan, 2011). There is evidence that both types of field trips contribute to the development of geographical skills.

*Aim 4: Geographical attitudes and values*

Values and attitudes found in the Australian Geography Curriculum include "a sense of wonder, curiosity and respect about places, people, cultures and environments throughout the world" (ACARA, 2016a; 2016b, p. 8). Sixteen sources made reference to the development of positive geographical attitudes and values as an outcome of field trips. Only one source directly linked VFTs to the development of attitudes and values, while twelve sources offered evidence that OFTs help develop the affective domain. Three acknowledged the usefulness of both types of field trips in building positive attitudes such as respect, tolerance and empathy.

Golubchikov (2015) has coined the term feel-trip, claiming that OFTs provide far more than knowledge, understanding and skills, but enter the affective domain where sensory, and therefore emotional engagement is heightened. Qui and Hubble (2002) agree, highlighting the sensory experience of OFTs as a reason to maintain them and are supported by Holton (2017), who claims that OFTs affectively modify the nexus between people and places, and Hope (2009) who also asserts a link between direct experience and affective response.

It is this raw connection that fosters a sense of connectedness as real-life learning takes place in real-world contexts (Klemm & Tuthill, 2002). D'Acosta (2008) adds more to this discussion by raising the importance of choosing destinations that have "an exceptional potential to elicit emotional responses" and further reminds us that "emotion drives intellect" (p. 71). It is interesting to note that the indigenous people of Australia have always valued their emotional connection to the land and this is viewed as integral to their identity, culture and sustainable practice (McKnight, 2016; Rigby et al., 2016).

According to the chosen criteria focused literature, sensory input appears to be a critical factor in eliciting emotional responses during field trips. On OFTs, sensory input is high, increasing opportunities for emotional engagement and collaborative decision making (Leydon & Turner, 2013). While the graphics and sound capabilities of VFTs have improved exponentially since their introduction, there is evidence that during screen experiences, sensory input is restricted (Aitken et al., 2012). Therefore, to rely exclusively on virtual experiences may be limiting the life learning of students. Haigh (2107), in contrast, believes that virtual experiences offer excellent opportunities for students to respond with awe and wonder. Louv (2016) proposes that humans need both computers and natural environments; "computers to maximise our ability to process intellectual data, and natural environments to ignite our senses and accelerate our ability to learn and feel" (p. 23). Medzini et al. (2015) agree and suggest a blending of OFTs with technology by using mobile devices to assist with learning.

The field trip literature accessed during this investigation places OFTs in a stronger position than VFTs in terms of eliciting an emotional connection. Emotional connection may lead to positive geographical attitudes, a finding supported by Lisichenko (2015) who acknowledges that "perhaps one of the highest goals to reach is conveying emotion in a virtual environment" (p. 63).

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*Aim 5: Informed, responsible and active citizens*

The final aim of the Australian Geography Curriculum is that it develops students "as informed, responsible and active citizens who can contribute to the development of an environmentally and economically sustainable, and socially just world" (ACARA, 2016a; 2016b p. 8).

The intentional inclusion of citizenship was scant across the scholarly publications investigated. Just eight publications referred to the development of citizenship in the context of field trips (Table 3). Of these, two sources indicated that VFTs might play a role in developing global citizens. In comparison, the remaining six sources indicated that OFTs play a decisive role in nurturing responsible citizens for the future. Sources referring to citizenship also referred to the development of positive attitudes.

When investigating the role of field trips in developing citizenship, La Velle (2005) included a list of VFT sites that address real-world problems and encourage global citizenship, positing that interacting with actual issues helps to develop an awareness and sense of responsibility in students. Jacobsen et al. (2009) concur, stating that VFTs allow access to environments otherwise out of range of geography students, and therefore promotes a sense of global citizenship. Beyond these two references, little was found that linked VFTs to citizenship.

Alternatively, there appears to be accumulating support for the belief that OFTs elicit emotional reactions, which, in turn, may encourage responsible citizenship. Golubchikov (2015) describes OFTs as an opportunity to connect emotions to learning in a way that helps students develop into thinking and active citizens. Klein et al. (2014) claim there is "no substitute for face-to-face immersion" (p. 25), with Krakowka (2012) positing that OFTs are memorable and that students remember their emotions longer than they remember the theory. The emergent idea is that physically interacting with both natural and human environments is vital to developing citizens who can make a positive contribution to their communities and world. The emotional responses to natural and built environments play a role in learning to respect the people who inhabit and value these environments. This includes the original landowners. Geography teachers should note, however, that isolated OFTs will not produce the same emotional connection as regular exposure and experience in natural environments does (Hope, 2009).

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### Logistical considerations in teaching Geography

While the purpose of this investigation linked to the aims of the Australian Geography Curriculum, the content analysis also revealed a significant trend in Geography field trips. It highlighted that teachers were increasingly likely to choose between OFTs and VFTs based on logistics, rather than learning considerations or outcomes. Numerous sources attribute a variety of logistical benefits to the VFT. These benefits include time efficiency, reduced cost, reduced paperwork, reduced safety risks, reduced supervision issues and weather suitability (Barton, 2017; Boyle et al., 2007; Jacobson et al., 2008; Klemm & Tuthill, 2002; LaVelle, 2017; Lisichenko, 2015; Morgan, 2015). These factors outweigh the identified disadvantages. They also cite technology issues and website closure as issues, while Jacobsen et al. (2009) point out that creating tailor-made VFTs can be time-consuming and expensive, but this considered, VFTs are simpler to conduct.

An advantage of VFTs is that they hold attention and offer educational advantages in a format that engages students for extended amounts of time (Klemm & Tuthill, 2002). Additionally, advances in technology, such as 3D glasses, offer an illusion of being on-site for students. Developers of VFT software intentionally seek out experts to present concepts and demonstrate skills. The experience and skill levels of these experts may exceed that of qualified and experienced teachers, presenting a further reason for the shift towards VFTs. In defence of OFTs, students learning skills on-site can receive immediate feedback from their teachers. There are opportunities to engage through asking and replying to questions, further students also learn to adjust and respond to changing variables such as the weather, time of day or season. These adjustments more fully reflect real-world situations. Confronted with a daunting list of logistical hurdles to clear before leading an OFT could explain why teachers may increasingly favour the safer, more comfortable option of VFTs over the more challenging but experiential OFT.

## Discussion

This investigation of publications about geography-related field trips revealed that OFTs and VFTs have both benefits and limitations in meeting the aims of the Australian Geography curriculum. Owens (2013) highlights the need to "maximise learning and motivation through more fieldwork opportunities", and to "make the most of new technology" (p. 384). She further claims that students will benefit from both VFTs and OFTs to achieve their educational outcomes, especially when it comes to geographical knowledge and understanding.

For skill development, both OFTs and VFTs play a pivotal role. Lisichenko (2015) advocates using a hybrid approach but cautions that poor teaching and preparation will limit the effectiveness of either type of field trip.

There is accumulating evidence that connection with the natural world promotes positive environmental attitudes (Braun & Dierkes, 2017; Chawla, 2012; Lloyd & Gray, 2014; Place, 2016). The development of positive attitudes through experiential learning suggests that on-site field trips may be not only desirable, but indispensable in Geography. It is the act of students getting their hands dirty; of engaging in a wide range of sensory experiences to explore the environment, which, in turn, arouses the emotions. Students may develop the skill of making connections between concepts through participating in either type of field trip; however, the real experience of place, space and time supports the inclusion of OFTs for geographical learning.

While sensory experiences may influence values and attitudes, attitudes and values appear to influence behaviour. Positive attitudes are more likely to be enhanced by OFTs which place students in environments where all their senses are attuned to their surroundings (Gaillard & McSherry, 2014; Golubchikov, 2015; Hutchinson, 2016; Preston, 2015). Simm and Marvel (2015) make the pertinent point that students develop a "greater sense of affinity and engagement" (p. 613) when immersed in place.

The Australian Geography Curriculum also aims for a sense of "wonder, curiosity and respect" (ACARA, 2016a; 2016b p. 8) in each student. Field-trips can elicit these values across diverse learners. This may occur through a sense of transcendence as students connect with their environment, as is experienced in indigenous cultures, or "an inner sense of relationship to a higher power that is loving and guiding" (Miller, 2005, p.28). Kessler (2000) supports this notion of transcendence or flow (Csikszentmihalyi, 1990) as a state of optimal experience. The arousal of emotions, especially when experiencing the natural world, may be a spiritual experience. From a faith-based perspective, experiential learning opens a world of awe and wonder that may connect students with God, and which may, in turn, positively affect their attitude to stewardship of the environment.

Concerning activities conducted outside, but not directly associated with field trips, several authors note that early connections to the natural world raise awareness and positive attitudes that continue into adulthood (Chawla, 2012; Lloyd & Gray, 2014; Place, 2016). OFTs are one possible way of building this affinity to environments. It is this sense of affinity that can help develop the qualities that create informed and active citizens.

Many of the environmental issues that challenge humanity are the result of ecological, economic, and political decisions. The challenge for geography teachers is to create empathy that leads to responsible participation. Today's students are future decision-makers. Both virtual and first-hand experiences may contribute to sound choices, but OFTs have the added capacity to connect emotionally, and emotional connection contributes to the development of "informed, responsible and active citizens" (ACARA, 2016a; 2016b p. 8).

Monbiot, writing in '*The Guardian*' (2017) says, "It's not a matter of high-tech or low-tech; the point is that the world a child enters is rich and diverse enough to ignite curiosity, and allow them to discover a way of learning that best reflects their character and skills" (par. 13.). Therefore, this investigation advocates for a hybrid approach to field trips, with a balance between experiences using all the senses, and experiences that offer learning experiences based in the world of virtual reality. Morgan agrees, positing that "VFTs cannot replace traditional field trips" (2015, p. 221), and is supported by others (Jacobsen et al., 2009; Kirchen, 2011; Qui & Hubble, 2002), who recommend combining OFTs with VFTs to maximise learning. Even those who tout the benefits of VFTs make statements such as "there is absolutely no substitute for the real thing" (La Velle, 2005).

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## Conclusion and Recommendations

Both VFTs and OFTs assist students in meeting the aims of the Australian Geography Curriculum. Each has strengths and limitations. Therefore, a combination of both will provide a variety of engaging experiences. If Geography was just about knowledge, understanding and skills, VFTs could probably meet the aims. However, the aims of Geography extend into the affective domain and stretch towards the future, requiring positive attitudes towards the diverse environments found on our planet, and the people who inhabit them. Therefore, while VFTs may be able to provide students with the answers for a sustainable future, it may be the OFTs that motivate them with the will to make the ongoing commitment to change that our planet needs for sustainability.

In the light of the aims of the Australian Geography Curriculum and past and current literature about Geography Field Trips, this evaluative investigation offers the following recommendations to Geography teachers.

1. Field trips should be chosen for their outcomes and capacity to engage despite logistical challenges.
2. An appropriate balance between OFTs and VFTs should be maintained in school Geography programs to ensure that all students may meet aims of knowledge and understanding, skills, attitudes, and citizenship.

3. Geography teachers should plan OFTs that are intentional in providing opportunities for an emotional connection with the land and the people who inhabit it.

*Epilogue*

*The Geography teacher reviews the field trip in her mind. Her Year 8 students have 'dirty hands'. They have shivered at the delicious tickle of a ghost crab running lightly across their palms. They have felt the sand trickle through their fingers. They have tasted the saltiness on the breath of the wind and heard the shrill squawking of seagulls over the crash of the waves pounding the beach. They have smelt the seaweed strewn on the sand and listened to it crunch underfoot. Their eyes have rested lightly on the panorama of the coastline and the sparkle of sun on the water. They have left nothing but footprints as the evidence of their engagement with the environment, but they have taken with them new knowledge, understandings and skills. More importantly, they may have also discovered an emotional connection, a sense of awe and respect. The next time some of these Year 8 students go to the beach, they may observe with aware eyes, what surrounds them. This heightened awareness may start to change how they think. Their connections with the coast and its original inhabitants may begin to shape them as global citizens, and position them to impact the world they will inhabit as they move towards a future where their 'active and informed' (CAG.EC, 2019, p.6 ) choices make a difference.* TEACH

*Their connections with the coast and its original inhabitants may begin to shape them as global citizens, and position them to impact the world they will inhabit*

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