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The **Training Technology** Newsletter





Welcome to Digital Frontier - Release Five

It has been a busy winter for the Training Technology team and as you will see from this issue of Digital Frontier we have had multiple projects on the go across all services and some HQNZDF Directorates.

Last month my team and I had an opportunity to present a workshop at the 24th International Association of Peacekeeping Training Centres (IAPTC) Conference held in Auckland (see feature on page 3). There were several hundred delegates from all over the world but also a strong contingent of NZDF personnel. We received some fantastic feedback from our 3D printing presentation but many NZDF delegates were completely unaware of Training Technology, or the services that we provide. So I thought I would take this opportunity to (re)introduce my team and outline the services we offer.

Training Technology develops digital material to support individual learning and education within NZDF.

We are sometimes confused with Defence Public Affairs - DPA who produce public-facing media materials such as video and

graphics. The Training Technology (TT) team is part of the Learning Services Group in the New Zealand Defence College. Originally stood up in 2004 as TBTU by the RNZN in Devonport, the northern team was later combined with the southern TMU unit at RNZAF Woodbourne. We work pan-NZDF so our location is not a big issue and our outputs are digital so time and distance present few challenges. Our services to NZDF are mostly free of charge, with the exception of travel and accommodation for video production or raw materials for 3D printing. We are in high demand so making an early scoping enquiry and planning ahead is essential. The more complex the e-learning outputs e.g. interactive video, animation, the longer the production time required. We will always recommend the best type of digital support to match the learners' needs or OJL context.

► **TVP Training Visual Producer**
Mr Sammi Kim (Devonport) and Mr Aaron Falvey (Woodbourne). These guys make fantastic training videos and a sample of their work can be seen in our own in-house video. We occasionally see instructional videos produced by NZDF personnel using a GoPro

or Handycam. Often the quality is poor and the video has limited value as an instructional tool other than as a procedural training aid. Our team have hi-spec cameras, lighting and sound equipment to capture the detail that is essential in a good training video. Aaron and Sammi are skilled and award winning film-makers so each brings a unique approach to working with SMEs to capture and produce high quality learning material.

TT has developed into a highly skilled unit with a team of specialists who deliver a variety of digital outputs to support online and face to face learning.

► **ELS E-Learning Specialist**
Ms Philippa Harvison (Devonport) brings together adult learning theory (andragogy) and instructional design best-practice to develop contemporary e-learning solutions. Working closely with SMEs she aligns Learning Outcomes and Instructional Objectives with the very best outputs from our TT team to ensure digital learning is effective, engaging and fit for purpose.

► **DTMP Digital Training Media Producer**
Mr Evan Floyd, Mr Frazer Gregory, Mr Akhil Warriar (Devonport) and Mr James Mitchell (Woodbourne) are our DTMPs, each with specialist skills that they bring to the e-learning environment. DTMPs work with our SMEs and Learning Designers to develop engaging e-learning content to be accessed via the LMS or as stand-alone classroom learning aids.

Their skillset covers:

- 3D CAD modelling and visualisation
- 3D printing
- Graphic design for web and print
- Multi-media design
- Animation
- AR/VR/MR
- 360 photography
- E-learning and design software (Articulate 360, Adobe CC, 3DS max, Google Sketch-up....),
- Learning Management Systems configuration
- HTML5 and Javascript
- Interactive video and web objects
- Support with external e-learning developers and providers

► **TLTT Team Leader Training Technology**
Mr Martin Boulton leads the TT team and works closely with HQNZDC to develop policy and strategy and to manage the implementation of e-learning and associated digital systems and processes. TT is also a partner in the Advanced Distributed Learning Network ensuring we remain connected and able to share in advances in digital learning through Five Eyes and NATO partnership nations.

E-Learning provides a platform that seeks to exploit the very best of digital technologies and utilise them in a learning context.

ELS and TLTT are available to meet with Instructors, Heads of School, Governance Bodies, Leaders and Commanders to discuss the benefits and opportunities to support F2F training with digital learning content.

Collectively TT team members have a diverse range of research interests in the digital space ensuring NZDF is well supported and able to explore new digital learning practices as they emerge.

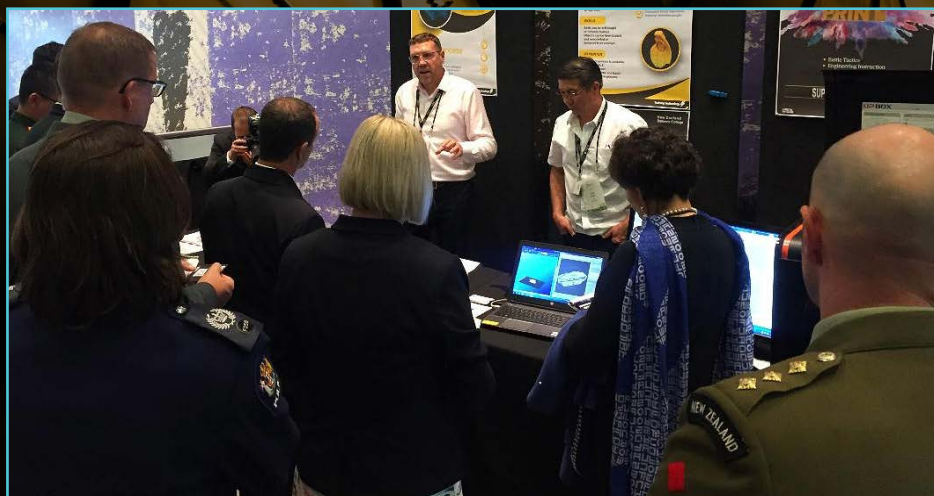
Martin

Martin Boulton
Team Leader
Training Technology

This was the first time in the 24 year history of IAPTC that Aotearoa New Zealand had been asked to host this conference. The theme for 2018 was **Innovative Capacity Building for Effective Peacekeeping.**

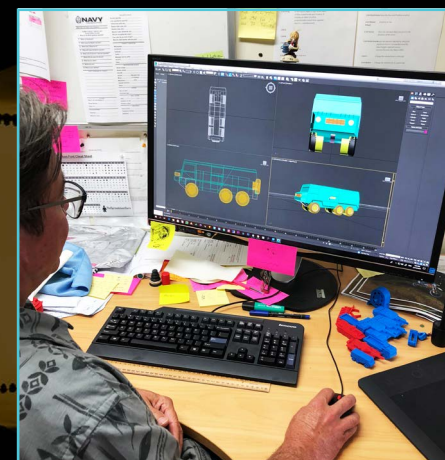
The Training Technology team was approached to be part of the 'Knowledge Café' sessions. These were a series of display stands where delegates could rotate through in short timed sessions, ask questions and then take the pros and cons back to their table to discuss with their fellow delegates.

Working with one of the conference organisers Wing Commander Murray Simons, the TT team planned an interactive display that focused on the use of 3D printing technologies and how 3D artefacts can assist in F2F training scenarios.



The 3D printed items supplemented the HADR briefing allowing personnel to visualise terrain, assets and population centres as well as linking to information through QR Codes.

Local interest from the NZ Army focused in on model kits for strategic training and also technical models to demonstrate the internal workings of ordnance and IEDs.



We crafted a HADR scenario using a map of Auckland and the Hauraki Gulf. The idea was that Rangitoto Island had erupted and the subsequent disruption to a city of 1.5 million people resulted in mobilisation of NZDF Forces to support civil authorities.

The TT presentation was well received with many overseas delegates asking about costs and 3D printing technology. One delegate from the Mexican Police Force commented on how they could have used this approach to support briefings following the last major earthquake in Mexico City in February 2018. A United Nations delegate also explored the concept of having 3D printers located in remote locations and having digital files for training aids sent via the World Wide Web or email.

3D printed objects can add fidelity and realism to training scenarios and learning experiences.

Such as:

- **Battlegroup Tactics**
- **Engineering Instruction**
- **Ordnance and Recognition**

If you would like to explore the use of 3D printing in your Unit or school for the purposes of enhancing F2F instruction get in touch with the TT team - DTMP Mr Evan Floyd.

Martin · Evan
Martin Boulton
TLTT | Evan Floyd
DTMP

QR Codes

What is a QR Code?

A Quick Response (QR) Code is a type of barcode which links to additional information about the object it is attached to.

Using QR codes in your instruction.

QR codes can be attached to specific items, which when scanned with your mobile phone, can open detailed information from a webpage.

This information can be updated regularly e.g training manuals, DFOs etc thus extending the usefulness of the item.

Knowledge checks can also be accessed through QR codes.

Most mobile phones can scan a QR code using an App. The latest iPhones simply use the built in camera and will connect automatically.

Try the QR code below.



Big Data & Learning Analytics

Any interaction a learner takes in an online system can now be recorded in real time.

From clicking a button, viewing a video, and taking a quiz (a transaction). We get to choose how deep this recording goes. If a learner watches a video, we can capture if they paused it, skipped parts, finished it, replayed it etc. Thousands of these transactions could potentially be recorded for a single learner on a single course. When put together with thousands of learners across hundreds of courses we are left with what's known as a huge pool of 'Big Data'.

With the right software we are able to 'data mine' this information in a more meaningful manner than the current pass/fail/completion/date system so often used these days. Using Big Data we can [in real time] monitor individual learner performances to identify outliers that require intervention, analyse assessment results, and discover trends or gaps. The challenge is to use this data to improve the learning taking place.

One practical example is from Learning Locker which uses data to show that the longer a video is, the less likely it will be viewed. While it may seem intuitive on first glance, having this type of data allows us to find the sweet spot between video length and learner engagement for our audience. In this case perhaps less really is more!

Data-driven decision making is nothing new but the rise of tools like xAPI (Experience API) will enable us to connect all our systems together to capture and analyse these specific learning events. Although we are not yet in this space we continue to keep up with the latest developments and the impact Big Data could have on the future of learning in the NZDF.



References:

A Quick Guide to Understanding Concepts Related to Learning Analytics, Retrieved from: <https://elearnmagazine.com/guide-learning-analytics/>

THE EVOLUTION OF BIG DATA AND LEARNING ANALYTICS IN AMERICAN HIGHER EDUCATION, Retrieved from: <https://files.eric.ed.gov/fulltext/EJ982669.pdf>

Be More Google: Using Big Data to Shape the Learner Experience, Retrieved from: <https://www.ht2labs.com/big-data-learning-like-google/>

James
James Mitchell
DTMP

DEVLEARN

DevLearn 2018...3000 attendees from over 40 countries, 6 learning stages, 130 exhibitors, 200 learning sessions and yet, DevLearn is so so much more than that.



This annual L&D conference is the place where what is hot in learning and technology finds a voice. It's a place where ideas and energy will be shared and amazing connections will be made. And, it's an event which people just LOVE to attend. The excitement is palpable as you join the throng heading through the hotel walkways towards the Grand Ballroom where the event will launch – and for good reason: every single person joining this conference is going to be blown away over the next three days by what they will learn, what will be shared, and how they will be inspired.

DevLearn is arguably the world's biggest learning and technology conference offering all who attend outstanding opportunities to grow organisational knowledge. This year NZDF chose to send two NZDC personnel, one from Training Technology and one from Performance and Evaluation. As Digital Frontier often casts the

spotlight on technology, this article focuses on the learning part of the DevLearn equation.

So what are the hot topics in online learning in 2018?

▶ Storytelling

Stories have been around as long as humans have walked the earth. We use stories to share, connect, and learn. Technologies used to share stories have advanced over time, but the power of storytelling to engage, persuade and inform has not diminished. So why do we continue to take learning out of its natural context and present it as a series of facts that must be digested? Setting, character, conflict and resolution are the foundation on which all stories are built, but keeping the scenario and the interactions close to real life are the key to creating a truly authentic learning experience.

▶ Articulate 360 and Rise

NZDF has been using Articulate Storyline to create e-learning courses for some time, but the release of the latest version of Storyline along with the addition of Rise has taken rapid development to the next level. In the Articulate User pre-conference workshop I attended, I learned how much more we can achieve in the new release with animation, motion graphics, variables, the new and extensive image library and much, much more.



▶ Microlearning

Whilst microlearning is not a new concept to either NZDF or the world of learning and development, it is still very much the hot topic. Organisations are using microlearning to huge effect to solve compliance challenges, to create learning support tools, to provide pre-learning materials for formal courses and to increase the stickiness of learning through the delivery of spaced repetition learning. One session used the following quote to illustrate just how crucial the learning delivery method can be:

"For 42 years, I've been making small regular deposits in the bank of experience: education and training. And on January 15, the balance was sufficient so that I could make a very large withdrawal."

Captain Sullenberger*

*Captain Chelsey 'Sully' Sullenberger saved 155 lives when he landed a plane in the Hudson river on 15th January 2009.

▶ Millennials

As more Baby Boomers are retiring, more Millennials are joining the workplace (and with 80 million people born between 1982 and 2000 in the US alone, that's a major shift). Millennials have been the focus of countless articles and books, each purporting to offer a guide on how to manage, recruit, and train this new generation. However, most of this information is incorrect and shaped by stereotypes.

Research into claims that millennials are in some way a different breed of learner were utterly discredited in the keynote given by Dr Jennifer Kriegel. Kriegel's own research has proven that any differences between millennials and other age based categorisations of learners are fictitious, discriminatory and should not be used in the workplace.

▶ Agile Instructional Design

TT have spent some considerable time in 2018 considering; a) how we can develop a process that will meet syllabus needs to expedite development? b) what methodology can we follow for agile design and development in our unique NZDF environment? One of the proposals at DevLearn is the use of Agile HPT (Human Performance Technology) with an LXD (Learner Experience Design) focus. This model uses story mapping as the key tool for analysis with reported success.

There is further research to be undertaken by TT in this space which will be applied to e-learning processes and products for validity testing, but current TT methodologies align well with what I saw here and I think the Agile HPT piece might be the missing link.

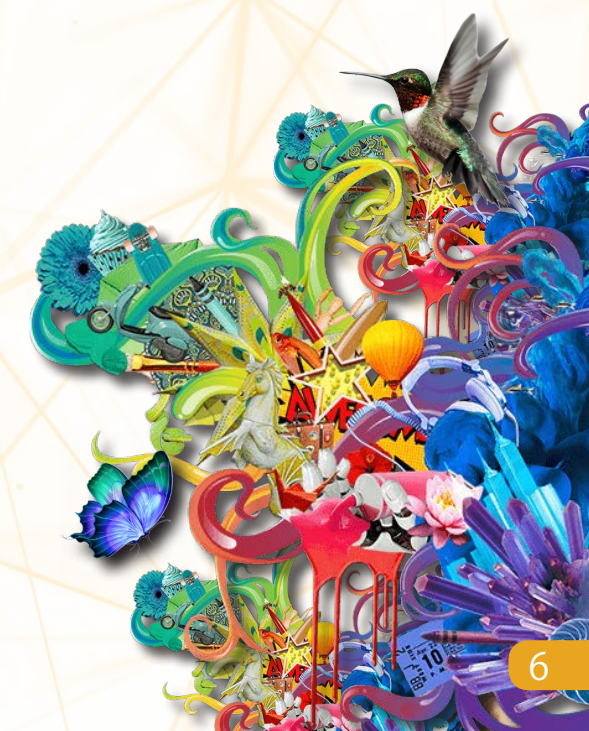
Other takeaways included ideas and inspiration on the topics of stop-motion animation, visual design, achieving a 2D parallax effect inside Storyline 360, the use of Javascript, script writing for e-learning, branching scenarios and how fear teaches us to 'outgrow' creativity.

However, if there is one takeaway that I valued over all the other things I learnt, it was that being generous with resources, with time and with ideas will always be the most expansive route to new learning.

As the eLearning Guild put it, this is sharing; this is collaboration; this is DevLearn. 2018.

Philippa

Philippa Harvison
ELS



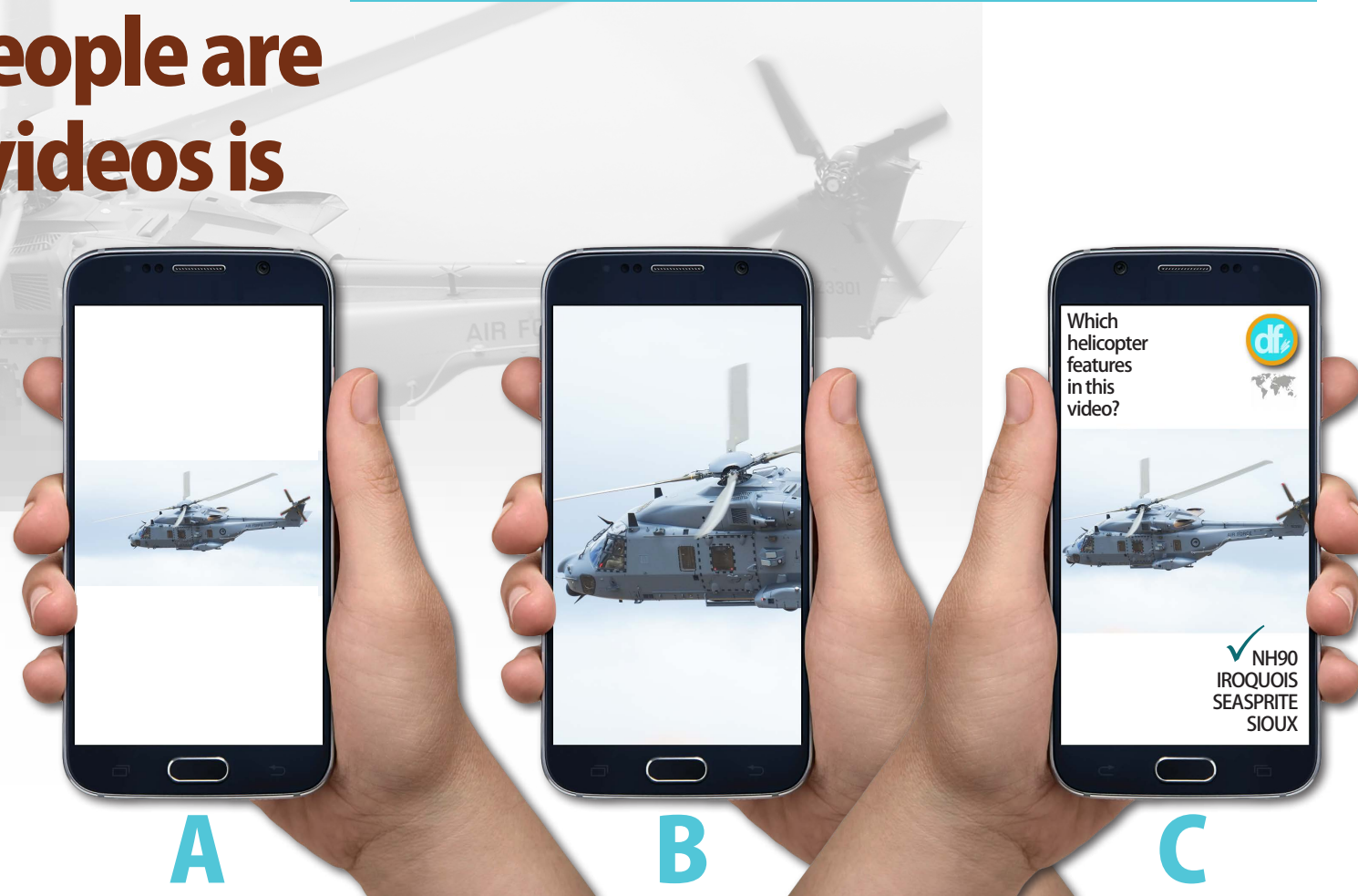
The way people are watching videos is changing.

As viewers we are used to the traditional methods of watching video in a typical 16:9 ratio (landscape) orientation such as watching television. More and more users are choosing to ditch their larger format screens such as PCs and laptops in favour of using mobile devices for their day to day tasks. Mobile device users naturally hold and view their devices in a 9:16 (portrait) ratio. Viewing video in this orientation poses some questions over redundant viewing space, for example watching a 16:9 video on a 9:16 screen means that two-thirds of the screen is not utilised when viewing the video. (Refer to Image A).

Recent developments on social media platforms such as Instagram and Snapchat, utilise space by displaying videos the entire height of the screen. This is being done in a number of different ways, either by cropping the image to fill the screen or having users record their video productions in a 9:16 ratio so the video naturally fills the entire screen.

(Refer to Image B).

Another alternative is to have content sitting in a 9:16 template with a 16:9 ratio video playing on part of the screen and text on the other parts. (Refer to Image C).



Using this latter template to enable learning on mobile devices holds a lot of potential, especially for micro videos.

In a 9:16 template with a 16:9 video playing in this space, the top third of the screen could be used for information such as the name of the course, topic, question or even the name of the learning provider. The lower third of the screen could be used for subtitles or learner interactions such as multiple choice questions or video controls.

Major social media players like Facebook, Instagram and Snapchat have all adopted this controversial vertical video format but this raises questions regarding the future of video: while television screens and computer monitors seem to become wider every year, smartphone manufacturers are making their screens taller. Video streaming platforms like YouTube have adapted their code so that the aspect ratio of the content best fits the device the user is watching it on. This is a conscientious decision to best utilise the screen real estate the user has available. It is a case where content creators and platform providers are adapting to the hardware market which is rapidly changing.



Aside from the chaos that is the 'aspect ratio argument', the resolution side of the video medium presents as a steadily inclining curve that shows no sign of stopping.

4K is now a standard video recording specification in most consumer and prosumer cameras as well as smartphones. 8K television and 12K cinema cameras are now a reality while the 1080p monitor you are probably viewing this document on is quickly going out of fashion.

It is noted that traditional video producers and filmmaking professionals have had an adverse reaction to the new vertical videos however the reality of the medium has shifted a long way from being locked to a 'standard' format.

Aside from the chaos that is the 'aspect ratio argument', the resolution side of the video medium presents as a steadily inclining curve that shows no sign of stopping. High resolution video such as 4K was seen as a novelty when it first came out because users doubted that it would be implemented in standard broadcast and streaming services in the foreseeable future. Now in 2018, not even a decade after it was first introduced, 4K is a standard video recording specification in most consumer and prosumer cameras as well as smartphones. 8K television and 12K cinema cameras are now a reality while the 1080p monitor you are probably viewing this document on is quickly going out of fashion.

Of course the resolution or the aspect ratio of video is not as important as the content. Radical changes in moving image technology are on the horizon and becoming more affordable which presents some exciting opportunities for the use of video technology in the development of learning materials for the NZDF.

Please get in touch with the TT team if your School or Unit is interested in developing high quality video content to support your learners.

Sammi · Aaron
Sammi Kim | Aaron Falvey
TVP | TVP



Considering using E-learning?



Not sure of your options?

E-learning techniques and tools like the ones outlined below can be developed to support Face to Face instruction to achieve a blended learning solution.

1

Pre Course

- Diagnostic Assessment
- Pre course questions (enquiry, recall, retrieval)
- Familiarisation material
- Talking heads video
- Animated messages
- Curated content
- Documentary style video

2

During Course

- Full courses
- Learning aids
- Scenarios
- Branching scenarios (with/without video)
- 3D models/animations
- Blended learning
- Instructional video
- 360 degree photography

3

Post Course

- Follow up learning
- Follow up assessment
- Memory boosts
- Re-quals
- Video

We're here to help so if in doubt please get in touch.



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For more information about Training Technology scan the QR code below to view our **Profile Video**.



or alternatively
Email Training Technology

R5 Contributors

TT Newsletter
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sys, 73.52% idle

CPU usage: 13.79% user, 20.68% sys, 65.51% idle
CPU usage: 3.24% user, 5.28% sys, 91.48% idle

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