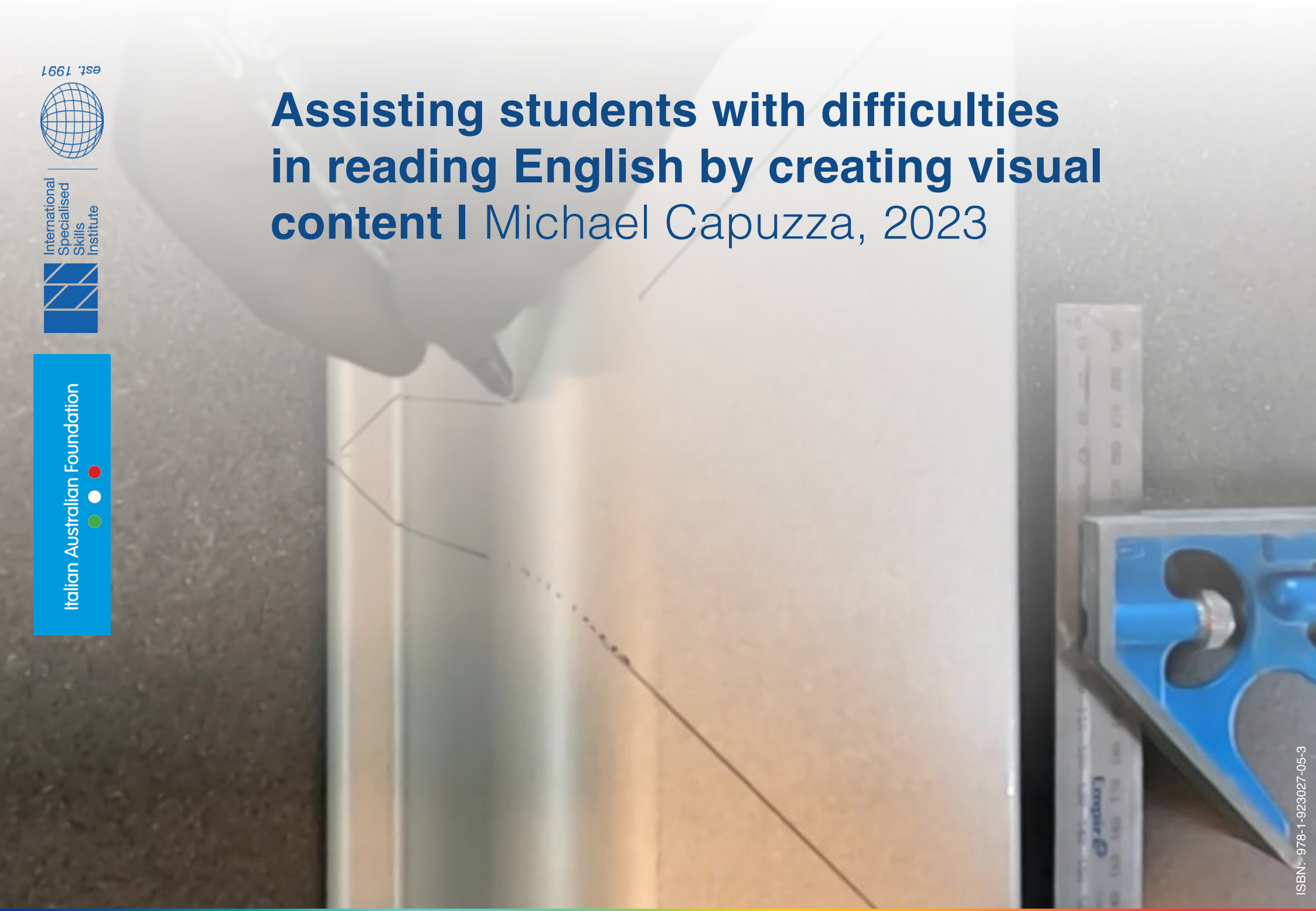

Assisting students with difficulties in reading English by creating visual content I Michael Capuzza, 2023

International Specialised Skills Institute

est. 1991

Italian Australian Foundation

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1. Acknowledgments

The Awarding Body – International Specialised Skills (ISS) Institute

The Fellow sincerely thanks The Italian Australian Foundation for providing funding support for the ISS Institute and for this Fellowship.

The ISS Institute plays a pivotal role in creating value and opportunity, encouraging new thinking and early adoption of ideas and practice by investing in individuals. The overarching aim of the ISS Institute is to support the development of a 'Better Skilled Australia'. The Institute does this via the provision of Fellowships that allow Australians to undertake international skills development and applied research that will positively impact Australian industry and the broader community.

The ISS Institute was founded in 1991 by a small group of innovators, including Sir James Gobbo AC, CVO, QC, and former Governor of Victoria, who had a vision of building a community of industry specialists who would lead the up-skilling of the Australian workforce.

The Fellowship program builds shared learning, leadership, and innovation across the broad range of industry sectors worked with. Fellows are supported to disseminate learning and ideas, facilitate change and advocate for best practices by sharing their Fellowship learnings with peers, colleagues, government, industry, and community. Since its establishment, ISS Institute has supported over 560 Fellows to undertake skill and knowledge enhancement across a wide range of sectors which has led to positive change, the adoption of best practice approaches and new ways of working in Australia.

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The Italian Australian Foundation (previously the Italian Services Institute Inc.) is an association dedicated to providing welfare and education services for disadvantaged persons of Italian descent who are a resident of Australia who would not have access to these services.

Michael Capuzza would like to acknowledge:

The International Specialized Skills Institute and the Italian Australian Foundation for making the Fellowship possible.

The organizers of Edutech Melbourne 2022 and Edutech Europe 2023

Australia

- The Hon. Natalie Hutchins MP Minister for Education and Minister for Women.
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- Bec Woolnough, educator, innovator and expert trainer.
- EduGrowth Australian Edtech.
- Bendigo Tech school girls in STEAM car project.
- Joanne Blannin Monash University.
- Annabel Astbury ABC,
- Richard Gerver keynote speaker and educator.

The Netherlands

- Kate Robinson, keynote speaker, daughter of the late Sir Ken Robinson,
- Sir Ken Robinson, educationalist and advisor on education,
- Dr Bart Rienties, Professor of Learning Analytics at the Institute of Educational Technology.

Italy

- Ada Imbastari, Abruzzo, Italy
- Michelina Iezzi, Abruzzo, Italy
- Elena Iezzi, Abruzzo, Italy

2. Executive Summary

The aim of the Fellowship is to learn and provide quality visual content for students pursuing trades through the lens of the issues that arose during the pandemic which created a forced shift to online visual teachings in a very different teaching and learning environment for both students and educators.

The Fellow creates an easy to view and understand series of short instructional videos for trade related students and short explanations for other educators to create their own content.

The methodology was to attend important teaching conferences; one in Melbourne Australia named Edutech 2022 and the other, Edutech 2023 in Amsterdam, The Netherlands. The Fellow learnt how other educational institutes tackled the problems that arose with the shift to online learning, and what worked and what could be problematic in the future for online education including the understanding of Video Analytics which are a major factor in retaining student's attention. Analytics can assist educators in various ways which will be outlined in this report. Unfortunately, Capuzza's Fellowship was put on hold due to the pandemic and was forced into online education as was every other educator across the world and all had to create visual content. This allowed the Fellow to set about making content for his student cohort. The Fellowship has been a long journey due to there being no international travel due to the pandemic, but the online learning benefited the Fellow once travel resumed.

The Fellowship has allowed Capuzza to express and enhance his abilities to create content to share with students in the VET sector. Suitable quiet locations with minimal shadow zones are advisable for the creation of content to be edited into short educational videos. Join Capuzza as he visually documents his journey in his report.

3. About the Fellow and abbreviations

Fellowship Period

March 2020 commencement of the Fellowship

March 2020 to June 2022 Fellowship on hold due to the COVID-19 pandemic.

- Part 1 June 2022 Edutech Melbourne - Attended a two-day conference on education at the Melbourne Exhibition Centre.
- Part 2 Attend Edutech Europe in The Netherlands, Amsterdam for a two-day conference.
- Part 3 Abruzzo Italy, the place of his family heritage and a brief visit to the Fucino plain where renewable energies are actively being adapted to the landscape.

Fellow biography

The Fellow completed his four-year plumbing apprenticeship in 1989 and worked in the plumbing industry until 2010 as a plumbing practitioner, employee and excavator operator. He commenced his teaching career in the VET Plumbing sector in 2010, while completing his training and assessor certificate. Following this, the Fellow completed a Diploma of Vocational Education and Training, and then the role of Certificate 2 in Plumbing Group Coordination at Melbourne Polytechnics. The Fellow is a member of the Plumbing Sheetmetal and Coppersmithing Association which has assisted the Fellow's growth in the training sector. The Fellow also worked for Kangan Institute from 2019 to 2022 which sparked his passion for creating and building visual resources for plumbing students. The Fellow is honing his skills for the future creation of visual content.

The Fellow is passionate about learning and portraying new and old skills for new young plumbers in the ever-changing plumbing industry, especially in the current environment of reducing natural gas consumption and switching to renewable inexhaustible energy sources, especially solar energy.

Abbreviations

PSCIA	Plumbing Sheetmetal Coppersmithing Industry Association
CERT 2	Certificate two level of education
Cert 3	Certificate three level of education
VET	Vocational Educational Training
QR code	Quick Response code

Dr	An abbreviated form of Doctor
Data Analytics	The science of analyzing raw data
LMS	Learning Management system
Edutech	Educational Technologies
SME	Subject Matter Expert
Fucino	A large endorheic lake located in Abruzzo Italy
Endorheic	A basin or lake having no outflow
Go pro	A small camera that takes the great quality point and shoot photos or pictures
Time Lapse	A means of filming by which many pictures are taken over a long period
SWMS	safe work method statement
PPE	personal protective equipment
PC	personal computer
Rivet	a short metal pin which holds two pieces of metal together
Vlogging Kit	A support or stand which holds a camera or mobile phone, microphone and light enabling video recordings
DSLR	Digital Single Lens Reflex Camera
Covid 19	An acute disease caused by the corona virus
Tilt rotator	An excavator attachment which allows a 360 degree swivel and up to 45 degrees allowing ease of excavation
VET	Vocational and Educational Training
VDC	Vocational and Educational Training Development Centre
Moodle	An Educational Electronic Learning Platform

4. Fellowship learnings

During Capuzza's time spent at Edutech Europe the Opening Plenary session was conducted by Kate Robinson, Kate is Sir Ken Robinsons daughter, Sir Ken was a British author, speaker and international advisor on education to the government and nonprofit organizations. YouTube has many speeches Sir Ken has given and the visual education aspect added to his words is amazing.

A link is provided here to a video named *a future for us* all https://youtu.be/r1v31ZElins Unfortunately Sir Ken has since died and this was his final video. The Fellow finds Sir Ken an inspirational speaker.

Part of the Fellow's Learnings at Edutech Europe was to understand and pass on information to his students and fellow educators with his visual learnings and analytics.

Kate Robinson said in her opening session that as students have mobile phones, and that they were born in a digital age, they should be using their phones on a daily basis in an educational environment. Initially the Fellow thought that that would be a distraction, but during the day he came to appreciate the mobile phone as an educational tool for his student cohort in the trade sector instead of treating it as a hindrance. His immediate thought was to create visual content and upload it to a private channel and attach a QR code to the content and then place the QR codes in the workshop relating to specific practical tasks. His recommendations are for TAFE institutes to train educators or allow staff to apply for professional development in the area of video creation. The challenge is to make the video interesting, readily understandable and not too lengthy. A video is a library of information for a student.

One of the guest speakers at the Edutech Europe conference was Dr Bart Rienties, a professor of Learning Analytics. Some of the components that he discussed were implementing Learning Analytics and learning design at Scale.

Analytics in learning can show time spent, areas of interest, usage of resources within a program, participation rates in correlation with students' grades, downloads, feedback received. Further information can be found in Chapter 4 of the book in the following link.

https://www.taylorfrancis.com/books/mono/10.1201/9781003194620/online-learning-analytics?refId=c4a01b91-4df6-4e40-b407-037bab36a8ab&context=ubx

Figure 1. Capuzza at Edutech Europe using a Go Pro remotely connected to his Mobile Phone taking a picture at the conference venue

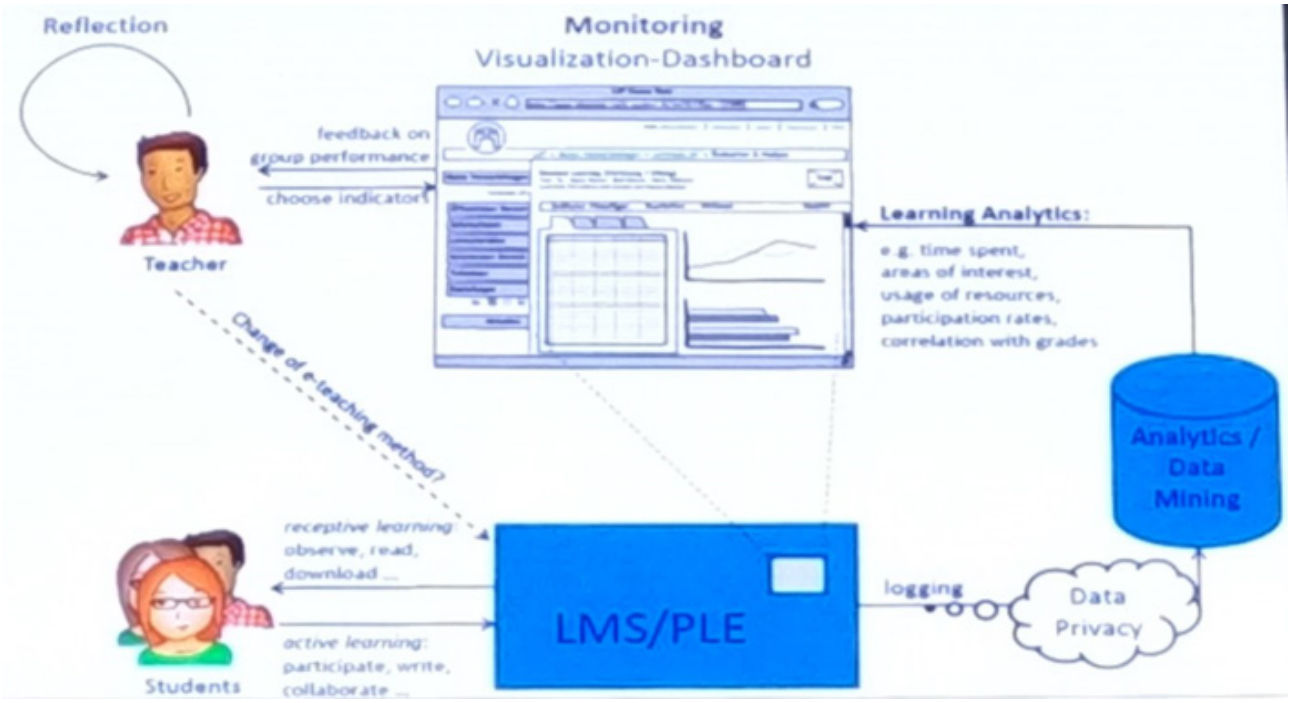

Figure 2. Rienties,B,DR 2022 Implementing Learning Analytics and learning design at Scale 7/10 Presenter Edutech Europe

An example of a LMS is below in which Analytics can be viewed and provide feedback to students and the educator

Data Analytics can also be implemented with visual content; one example is Youtube .It is an advanced learning mechanism which monitors and analyses video content. The visual creator can view the data Analytics behind an uploaded video.

The analytics can show how long viewers are seeing content, the age, click through rate, gender, country and more; all of this can assist how video content is built.

This, and more important data made the Fellow aware that there is a need for better visual content, and it should be specifically targeted for students. For instance, in the trade sector, visual content can be created in a particular way to retain viewers.

The image below is of a woodfired oven build. The average view duration of a 25-minute video was 5.16 minutes. The view rates of an age group of between 45 to 54 years was 43.2%, The group was mainly male.

Figure 3. Capuzza M,2019 Woodfired Oven 3/6 YouTube

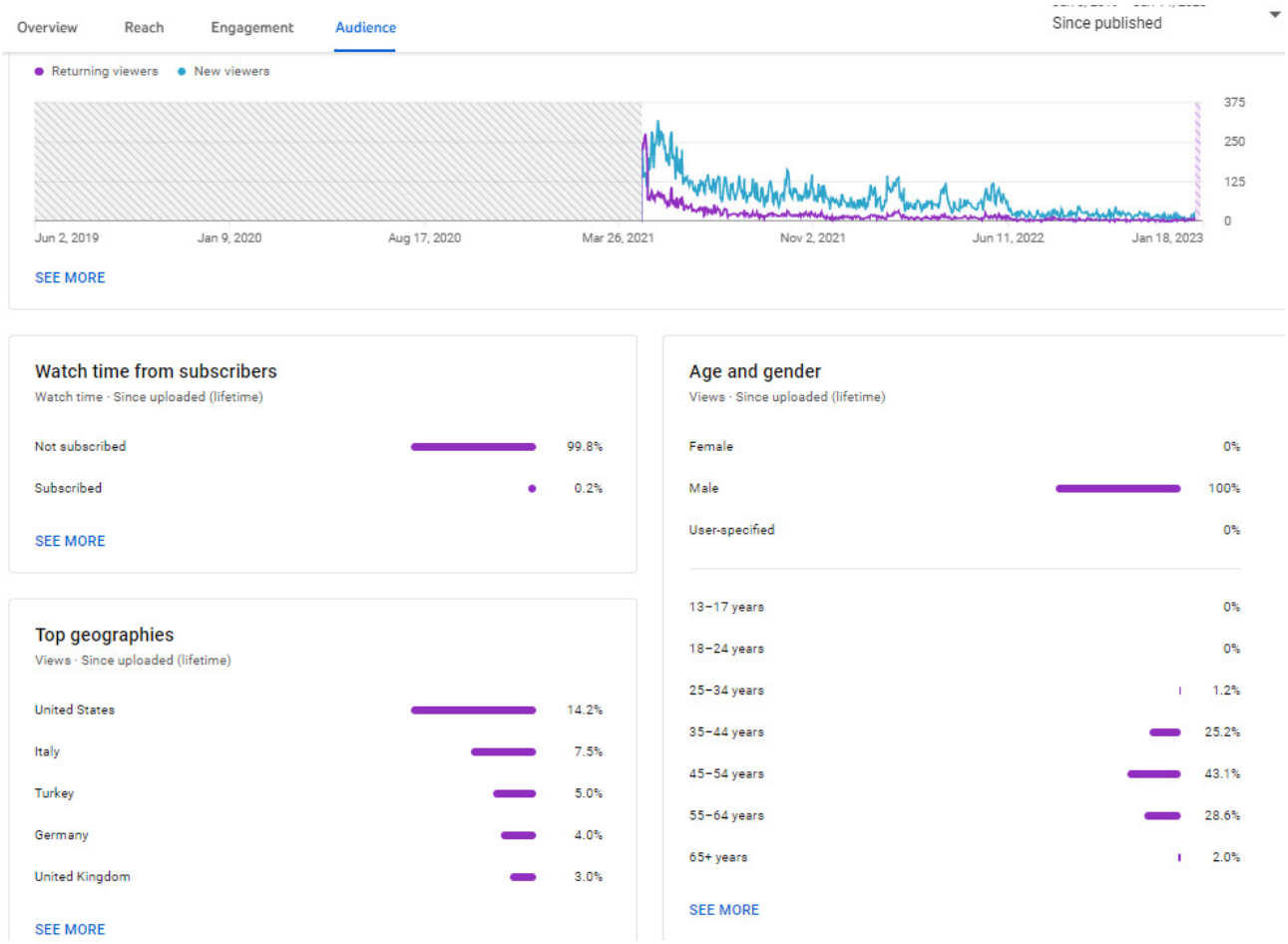

Figure 4. Capuzza M,2019 Woodfired Oven 3/6 YouTube

The Fellow attended Edutech Melbourne at the Melbourne Exhibition Centre, where one of the speakers was Richard Gerver,

author and highly regarded educator and thinker. Gerver believes that despite the difficulties which the pandemic created, it also made many people, and children in particular, resilient, and better able to cope with changes in society.

By following the below approach the visual content is to the point, interesting and engaging.

To create visual content the Fellow has viewed his findings and is enhancing and implementing the following methods in its creation.

- **Firstly, video content must be no longer than 6 minutes;** this is difficult because learning content is longer than 6 minutes therefore it must be broken into sections eg: 4 x 6-minute videos with question banks centered around what the educator is discussing. These videos

could be in an E learning platform such as Moodle program and the first question bank can be the commencement trigger for the unit.

- **Embed questions inside the video content;** consider embedding questions close to the start of the video, as it leaves the student thinking about or wondering what the answer is. Then, during the video, answer the questions and elaborate on the answer.

- Lighting in your workspace is important eg: ensure there is good lighting and try to minimize shadows.
- **Camera focused closely on the learning subject.** Have the camera mounted on a tripod on the opposite side of the table focusing down on the task being worked on. The picture will be in reverse, but it can be flipped inside the editing program. Having the camera mounted on a tripod not touching the table will stop the camera shaking. The Fellow suggests using a DSLR camera.
- **Speak about what your hands are creating.** Speak about the practical tasks you are creating so that the YouTube video algorithms will create captions for students watching the content. This is very useful in a loud workshop environment eg: a sheet metal practical area.
- **Create an introduction and ending Jingle.** Creating or using an introductory or ending jingle will keep students interested and entertained and will build up the Institute's presence and enhance branding for the Institute.
- **Speed up the pieces that are repetitive.** For instance, cutting a piece of sheet metal or riveting which could take up valuable screen time. Speed up the footage, or time lapse this part of the video.
- **Background music.** Background music can often be helpful in creating a video.
- **Rotate the practical task.** Rotate the task on every axis. This provides a better perspective of the completed task.
- **Show the completed task at the introduction after the video start jingle.** Show the completed task and where it fits on a house. This will be like a jigsaw puzzle in the student's mind and where it fits on a house will retain their interest.

An example of a completed task at the introduction of a video:

- **Always enforce personal protective equipment use.** Ensure the educator has filled in a SWMS and is wearing PPE. Students must understand the importance of safe working practices.
- **Use mechanical aids to speed up the video length.** Use of a cordless pop riveter in sheet metal will speed up the installation of 20 rivets on a practical task.

- **Making mistakes during video recording.** Everybody makes mistakes whilst speaking during video creation. The Fellow's method is to pause for approximately 30 seconds, collect his thoughts, and resume talking whilst recording. This creates a gap in the media and while editing, delete that section and rejoin the content.
- **Make it relevant.** View your training resources and build the visual content to work alongside your teaching resources.
- **QR code generators.** Create video content with QR code generator links.eg: imagine a scenario where a teacher has 18 students asking for assistance with marking out a particular angle of guttering. The QR generator can be placed on the workshop wall with a short description, and the student can scan the code and go to the marking process of the sheetmetal task and then show the teacher prior to cutting the angle out. The student can also pause during the video while marking out the angle.

These requirements sound straightforward but can be challenging when trying to create visual content. First, there must be a quiet and clean area or workshop. One needs access to the tools required to create the content; cameras, tripods, editing software, portable hard drives, a storage place within your institute online or a platform on which to place them.

Visual content can be created with a simple vlogging kit and mobile phone. A vlogging kit consists of a bracket which will hold the mobile phone and connect to an external microphone. It also holds a led lamp for better lighting. Once the content Is created with the video function on the phone it can upload to cloud, hard drive or PC.

The Fellow's personal choice of video creation tools are.

- **A go pro hero 10** as it has a forward-facing screen which allows the educator to remain visible while speaking and remain centered in the frame as it has a stabilization function.
- **A DSLR camera,** Use a **digital single reflex camera** which has a larger screen and the focus can be adjusted to hone in on the subject being created but the go pro hero 10 can do just as good a job as the DSLR camera for student video creation.

- **A collapsible tripod**, for compactness and easy storage. One with a base plate that can fold to 90 degrees whilst holding a go pro.
- **A Go pro selfie pole**. A go pro selfie pole can adapt from the camera to the tripod and mounted at 90 degrees it can be directly over your subject working area.
- **A rugged hard drive.** A hard drive with a rubber casing of at least one terabyte for storage of all media. It is also advisable to store on a cloud or institute drive.
- **Batteries**. Ensure there are enough go pro batteries and a charger that can charge multiple batteries at the same time.
- **Good lighting or a light mounted on your go pro.** A vlogging kit or go pro can have a light mounted on it.

- **A Video recording drone.** A drone in trade education can be a significant educational tool as it can fly up to the gutters of a house and show the piece of the jigsaw puzzle where the created task fits on a house. The Fellow is currently using and practising with a DJI mini SE drone.
- **Video editing program.** The Fellow's experience with editing programs is limited, but he has tried certain programs and the easiest he finds to use is a program called Wondershare filmora. For non-professional use he finds it quite easy to use and it also has tutorials on YouTube.

The finished visual content created with the Fellow's recommendations can fill gaps within educational resources. In Moodle digital teaching programs which can embed visual content as a digital shift of partial components to online resources or as below QR codes on walls above workstations.

Some Institutes may allow staff to use the above equipment or better still, shoot the video for you and then edit it.

The conclusion is to keep video content to no longer than 6 minutes, embed questions, answer the questions during the video content, speak clearly and follow the dot pointed steps above. This will add to a better resource for the student, educator and a learning management system. Below is a QR Code which is linked to a private channel on YouTube with a sample of a finished video for trade students, Scan the code to view the video or click on this link https://youtu.be/L8RDQRMqTcM

Marking out an Internal Quad Angle

The Covid 19 pandemic which affected everyone's lives began in early January 2020.It created a forced shift in education from on campus to home and online and meant educators had to become familiar with Zoom and online education. After many weeks of delivering on line we ran out of visual content and the Fellow then had to create more visual content to keep the students interested, and maintain their motivation. Camera and tripod were moved to the Fellow's back yard or driveway. The birds were chirping in the background and the dog was standing at his feet. It was an emergency procedure, but it worked. Once the content was created it was uploaded to a

PC, edited, then uploaded to a private YouTube channel and a link given to students the following morning. Once the students viewed the content they would have to answer specific questions on the visual content and this was repeated many times on every lock down. Here is an example of visual education during the lockdown which was in low lighting conditions and created with the tools available at the time. Follow the link here https://youtu.be/29jkHTAo50E

The Fellow's journey is documented visually. Click on this link https://youtu.be/4mITHggsqSk and you will see the journey starting in Melbourne, then Amsterdam and then to his family heritage in Abruzzo Italy. As an Italian Australian Foundation Fellowship, the Fellow has explained his Italian heritage in this video, by taking the reader to his family hometown, where renewable energy programs can be seen, and at a worksite in Amsterdam.

Personal, professional and sectoral Impact

On a personal level the Fellowship has enhanced Capuzza's self-confidence to interact with friends, family and viewers and through a YouTube channel by creating interesting visual content and by understanding analytics which will create viewers and interesting conversations around the content at parties and family gatherings. Capuzza has learnt to view much of his daily routines through a camera or video lens and to speak confidently while being recorded on video. He watched a speaker at Edutech Europe discuss the use of mobile phones in the class room and was impressed by this. The Fellow now speaks to students while creating content in front of a camera, which is a challenge as the viewer has no knowledge of what is being created.

On a professional level the findings will allow the Fellow to create visual content and embed the content within Certificate 2,3 and IV programs in the VET sector and also interact with other creators of visual content within his organization or other institutes, share tips and tricks in using video, audio equipment and video editing programs. He was inspired to use a mobile phone as an educational tool in the class room to embed QR codes into his visual creations which students or educators can easily scan via their phones or tablets, while in the workshop and complete their practical competencies in a visual perspective. A sample is a QR code in this report which can be scanned and viewed. It is also available in the Fellow's workshop for students. Melbourne Polytechnic has embraced the visual creation content and is rolling out the created content within the Cert 2 and 3 courses commencing with plumbing. On a further professional level the findings at Edutech Europe allowed the Fellow to view Analytics as a teaching tool as other European schools have in their teaching programs which are now being embedded within Melbourne Polytechnic Moodle teaching programs.

The professional impact can also boost the Fellow's confidence to create visual content, create further opportunities as a subject matter expert, to embed visual content within teaching programs,

liaise with other departments in assisting them with creating content and even be a major part of students completion of their trade modules. The Fellow's department is allowing embedding of visual content within the teaching resources within his area.

The broader sectorial impact will allow other institutes to follow suit via the Fellow's methodology of creating visual content and use of a mobile phone as an educational tool. The methods will be shared with the Plumbing Sheetmetal and Coppersmith Associations annual conference where educators across Australia attend, and within Certificate 2 and Certificate III moderation meetings which are attended by Technical and Further Education institutes across Victoria. Already other institutes are using the methodology of visual content creation within Moodle training programs or are extremely interested in future content creation. The QR code below is an example

As an educator, with a class of students all asking the same question of how to mark out an angle, the educator can refer them to the QR code and then assist them by checking how they marked the angle as per the visual instruction.

Future developments are a visual content library, or other educators liaising with the Fellow and stepping up to assist with visual content creation. As the Fellow commences his creation of content, a further development for the sector could be a library with QR codes on the walls of the practical workshops within the TAFE sectors. A broader description of the findings could enable better visual content within the trade sector with minimal equipment and staff to create content as the Fellow is an advocate for embedding content in Cert 2, 3, and 4 Courses. The Fellow will be creating a guide on how to create visual content for the trade sector for interested creators or educational Influencers. The Fellow can also assist in setting up a training course in conjunction with the VDC to assist other educators or the PSCIA.

Organizationally the Fellow is also assisting other passionate educators create content for their areas of strength within the departments as some educators, are more professional at certain aspects of teaching, eg: gas or sanitary training.

5. Considerations / recommendations

The Fellow's skills enhancement, recommendations, considerations, approach and applying his findings for students in trade is taken from researching Analytics, The Edutech European conference, Edutech Melbourne, Analytics in YouTube, research from student feedback. A major consideration could be a course set up by the Vocational Education and Training Development Centre.

The courses could be a discussion on :

- How to make visual content into smaller chunks
- What type of user-friendly media equipment to use
- What workspace is available to create visual content
- What type of hard drives to store media can be used
- Recommendations on where to place the visual content on a Learning Management System
- How to build content as an individual without a camera
- A type of easy-to-use video editing program to stitch all the content together
- What platforms can be used within institutes to upload the content to
- How to enable students to view the content in trade work shops
- How to receive feedback on viewed content

All the above dot points could be of assistance to other trainers /educators when beginning to create visual content. This could include Plumbing, Electrical, Carpentry, Water proofing, Concreting, Bricklaying or more trades in the VET sector or even abroad.

Content creation can be across cert 2, 3 and IV courses but mainly used for practical task creations.

Another recommendation could be for other vocational organisations to follow suit and embed visual content within their own departments or even pool content within shared folders at moderation committees for cert 2, 3 and IV. The advantage of the moderation committees is that many minds combined can create a better outcome for the student cohort which will ensure a minimum standard of education across the TAFE sector.

6. Conclusion

The conclusion of the Fellowship is for educators to try creating visual content by using the above recommended media equipment or begin with a simple vlogging kit and phone, then use a simple editing program as described above. Upload to a private YouTube channel, embed into a learning program, and once the content has been viewed for a month then view the analytics in the YouTube platform which will show where a student has stopped viewing the content or skipped a section. Students can be asked if the video assisted them, seek their responses, and consider areas for any improvement.

7. References

Robinson, K Keynote speaker 2022 Never grey 5th October Amsterdam

Robinson, Ken Sir 4/22 site Sir Ken Robinson A future for us all [https://youtu.be/r1v31ZElins] YouTube

Gerver, R 2022 Beyond Efficiency an education fit for the future 10/8 Presenter Edutech Melbourne

Rienties,B,DR 2022 Implementing Learning Analytics and learning design at Scale 7/10 Presenter Edutech Europe.

8. Appendices

Edutech Melbourne 2022 Inspiring educators of Tomorrow follow the links https://youtu.be/I7SRLVnLn18

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