TABLE OF DOCUMENTS ANALYSED

Table Below is the list of the documents I have used to analyse the 4 questions above.

Document	Relevant Data / Insights	Research Questions Addressed
Joseph, P. (2014). Students aren't graduating with right skills for VFX industry. Televisual. Available at: https://www.televisual.com/news/students-aren-t-graduating-with-right-skills-for-vfx-industry_bid-591/ [Accessed 6 Nov. 2025].	Highlights mismatch between graduate skills and industry needs. Emphasizes importance of both hard and soft skills.	Q1, Q2
Creative Skillset. (2018). <i>Delivering STEM skills for the economy inquiry</i> . Written evidence to the Public Accounts Committee. Available at: https://committees.parliament.uk/writtenevidence/89281/html/ [Accessed 6 Nov. 2025].	Advocates for STEM recognition in creative industries. Notes skill gaps and diversity challenges.	Q1, Q2, Q3
 Migration Advisory Committee. (2019). Full review of the Shortage Occupation List. GOV.UK. Available at: https://www.gov.uk/government/publications/full-review-of-the-shortage-occupation-list-may-2019 [Accessed 6 Nov. 2025]. Migration Advisory Committee. (2020). Review of the Shortage Occupation List: 2020. GOV.UK. Available at: https://www.gov.uk/government/publications/review-of-the-shortage-occupation-list-2020 [Accessed 6 Nov. 2025]. Migration Advisory Committee. (2023). Review of the Shortage Occupation List. GOV.UK. Available at: https://www.gov.uk/government/publications/review-of-the-shortage-occupation-list-2023 [Accessed 6 Nov. 2025]. Salah, L. (2024). Hiring and Sponsoring Graphic and Multimedia Designers (SOC Code 2142). GetBorderless. Available at: https://www.getborderless.co.uk/blog/hiring-sponsoring-graphic-multimedia-designers-soc-code-2142 [Accessed 6 Nov. 2025]. UK Visas and Immigration. (2025). Skilled Worker visa: going rates for eligible occupation codes. GOV.UK. Available at: https://www.gov.uk/government/publications/skilled-worker-visa-going-rates-for-eligible-occupation-codes [Accessed 6 Nov. 2025]. Skills England. (2025). VFX artist or technical director – VFX Simulation (SOC 2020 code: 2142). Available at: https://skillsengland.education.gov.uk/apprenticeships/st0902-v1-0 [Accessed 6 Nov. 2025]. 	VFX and animation roles consistently listed due to skill shortages. Highlights reliance on international talent.	Q1, Q2
UK Screen Alliance. (2025). <i>The UK's VFX Workforce</i> . Available at: https://www.ukscreenalliance.co.uk/subpages/the-vfx-workforce/ [Accessed 6 Nov. 2025].	53% domestic workforce pre-Brexit. Ongoing lobbying for STEM classification.	Q1, Q2

Olsberg • SPI. (2023). Skills scoping study for the digital content production sectors. Report to the British Film Institute. Available at: https://www.bfi.org.uk/industry-data-insights/reports/skills-scoping-study-digital-content-production-sectors [Accessed 6 Nov. 2025].	Identifies skill gaps across digital content sectors. Highlights need for curriculum reform.	Q2, Q3
CAMEo Research Institute. (2018). Workforce Diversity in the UK Screen Sector – Evidence Review. University of Leicester. Available at: https://www.bfi.org.uk/industry-data-insights/reports/workforce-diversity-uk-screen-sector-evidence-review [Accessed 6 Nov. 2025].	Evidence of male dominance and lack of diversity. Emphasis on soft skills and advanced IT skills.	Q1, Q2
Axis Studios. (2024). <i>Education Outreach Booklet</i> . Available at: https://www.scribd.com/document/725103273/Axis-Studios-Education-Booklet-2024 [Accessed 6 Nov. 2025].	Identifies core hard and soft skills needed in VFX and animation.	Q2, Q3
UK Screen Alliance. (2025). <i>The Core Skills of VFX Handbook</i> . Available at: https://coreskillsofvfx.com/ [Accessed 6 Nov. 2025].	Defines work-ready skills including communication, collaboration, and adaptability.	Q2, Q3
Grierson, M. (2024). The 'Skills Gap' in the Animation/VFX Industry in Scotland. Animation, 19(2–3), pp.161–176. Available at: https://doi.org/10.1177/17468477241281629 [Accessed 6 Nov. 2025]	Highlights regional skill gaps and need for soft skills development.	Q2, Q3
ScreenSkills. (2019). Annual ScreenSkills Assessment. Available at: https://www.screenskills.com/media/2853/2019-08-16-annual-screenskills-assessment.pdf [Accessed 6 Nov. 2025]	Provides workforce trends and training gaps in creative sectors. Highlights underrepresentation and need for soft skills development.	Q1, Q2
UK Screen Alliance, Access VFX and Animation UK. (2019). <i>Inclusion and Diversity in UK – Visual Effects, Animation and Post Production</i> . Available at: https://www.ukscreenalliance.co.uk/subpages/inclusion-and-diversity-in-the-uks-vfx-animation-and-post-production-sectors/ [Accessed 6 Nov. 2025]	Reports male dominance and lack of ethnic diversity. Recommends inclusive hiring and soft skill training.	Q1, Q2
ScreenSkills. (2022). <i>Accessibility in Animation</i> . Available at: https://www.screenskills.com/media/5239/2022-02-11-accessibility-in-animation.pdf [Accessed 6 Nov. 2025].	Explores accessibility challenges and inclusive practices in animation education and employment.	Q1, Q2
House of Commons. (2023). Diversity and inclusion in STEM: Government Response to the Committee's Fifth Report. Available at: https://committees.parliament.uk/publications/40456/documents/197355/default/ [Accessed 6 Nov. 2025].	Government acknowledges barriers to STEM participation and supports initiatives to improve diversity.	Q1, Q2
Department for Culture, Media and Sport. (2023). Creative Industries Sector Vision. Available at: https://assets.publishing.service.gov.uk/media/64898de2b32b9e000ca96712/ Creative_Industries_Sector_Visionaccessible_versionpdf [Accessed 6 Nov. 2025]	Outlines strategic goals for talent development and skill-building in creative sectors, including VFX and animation.	Q2, Q3
Department for Science, Innovation and Technology. (2024). STEM Subjects: Employment. Available at: https://questions-statements.parliament.uk/written-questions/detail/2024-03-26/902269 [Accessed 6 Nov. 2025]	Parliamentary discussion on employment outcomes for STEM graduates in creative industries.	Q2, Q3

ScreenSkills. (2025). What are work-ready skills and why teach them? Available at:	Defines essential soft skills for employability	
	Defines essential soft skills for employability	03 03 04
https://www.screenskills.com/starting-your-career/work-ready-skills/work-ready-skills-an-	including communication, teamwork, and	Q2, Q3, Q4
introduction/ [Accessed 6 Nov. 2025]	adaptability.	
• FutureLearn (n.d.) Study Melbourne. Available at:		
https://www.futurelearn.com/info/courses/study-melbourne/0/steps/265774 (Accessed: 11 July		
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• University of Texas (n.d.) Flipped Classroom. Available at: https://ctl.utexas.edu/instructional-		
strategies/flipped-classroom (Accessed: 11 July 2025).		
Harvard Bok Center (n.d.) Flipped Classrooms. Available at:		
https://bokcenter.harvard.edu/flipped-classrooms# (Accessed: 11 July 2025).		
University at Buffalo (n.d.) Scaffolding. Available at:		
https://www.buffalo.edu/catt/teach/develop/build/scaffolding.html (Accessed: 11 July 2025).		
• Vanderbilt University IRIS Center (n.d.) Instructional Scaffolding Module. Available at:		
https://iris.peabody.vanderbilt.edu/module/sca/cresource/q1/p01/ (Accessed: 11 July 2025).		
Alber, R. (n.d.) Scaffolding Lessons: Six Strategies. Available at:		
https://www.edutopia.org/blog/scaffolding-lessons-six-strategies-rebecca-alber (Accessed: 11	Discusses flipped classrooms, scaffolding, and	
July 2025).	instructional strategies to support soft skills.	
• University of San Diego (n.d.) Scaffolding in Education: Examples. Available at:	Explores challenges of applying theory to	Q4 Mainly
https://pce.sandiego.edu/scaffolding-in-education-examples/ (Accessed: 11 July 2025).	practice in HE. Supports curriculum change	
Brooklyn College (n.d.) Assignment Scaffolding. Available at:	for soft skill integration.	
https://www.brooklyn.cuny.edu/web/aca_facultywac/Workshops-AssignmentScaffolding-		
120412.pdf (Accessed: 11 July 2025).		
• Northern Illinois University (n.d.) Instructional Scaffolding to Improve Learning. Available at:		
https://www.niu.edu/citl/resources/guides/instructional-guide/instructional-scaffolding-to-		
improve-learning.shtml (Accessed: 11 July 2025).		
• Kirschner, P.A., Sweller, J. and Clark, R.E. (2006) 'Why Minimal Guidance During Instruction Does		
Not Work: An Analysis of the Failure of Constructivist, Discovery, Problem-Based, Experiential,		
and Inquiry-Based Teaching', Educational Psychologist, 41(2), pp. 75–86.		
https://doi.org/10.1207/s15326985ep4102_1		
Hughes, G., Baume, D., Silva-Fletcher, A. and Amrane-Cooper, L. (2024) 'Developing as a teacher:		
changing conceptions of teaching and the challenges of applying theory to practice', Teaching in		
Higher Education, 29(8), pp. 2168–2183. https://doi.org/10.1080/13562517.2023.2212589		

FINDINGS IN STEPS 1 AND 2

After performing students' summative and formative assessment PLUS reflecting on students' face-to-face tutorials and class interactions, I was puzzled with the fact that many of the students don't perform with STEM oriented minds thus delivering final assignments with shallow reflective blog and low-quality projects. Only a few students had troubleshooting and analytical mindsets, one of the main STEM skills, that helped them deliver higher standard assignments.

My whole professional career of 15 years had been surviving through developing both hard and soft skills equally to ascend in a field dominated by men. Maybe this would be the key to increase diversity and inclusion in practical terms. It seemed to me that the students lacked reflecting and acknowledging the importance of soft skills.

After delving on the subject for months before and during PG Certificate commencement, I decided to choose this subject of my enquiry when started the Intervention Plan during the Inclusive Practices. However, I had to find some answers to the questions below, so I recurred to gather Online data from websites on Education and VFX Industry, which in turn took me to research Government data. Below I list what answers I got through analysing their documents and contents:

1- IS VFX, ANIMATION AND POST PRODUCTION INDUSTRIES REALLY A MID-CLASS MALE DOMINATED WORLD?

STEM field is recognized widely to be predominantly a male dominated field. VFX (and related sectors) as employing STEM hard and soft skills and considered officially to be a STEM sector will reflect this male dominance.

My personal experience of being the only woman (or one of the 2,3 or 4 women) working in the department wouldn't suffice. I needed to gather quantitative data from Documents available on the Internet and produced mainly by organizations such as UK Screen Alliance, Animation UK, Access VFX, ScreenSkills and government. To check diversity in the VFX, Animation and Post Production sectors, I have analysed mainly 2 publications in 2018 and 2019:

- Evidence-review by CAMEo- University of Leicester (2018) found only 3 publicly available sources with granular workforce diversity data for VFX or animation, namely the Creative Skillset surveys of 2012, 2014 and 2015. Insights were mainly gender diversity and nationality and included a great sample of more than 5,000 workers.
- A Survey report (2019) was conducted by the UK Screen Alliance, in collaboration with Animation UK and Access VFX. Responses were gathered from over 1,150 workers across VFX, animation, and post-production sectors, primarily from large London-based companies of more than 250 staff. Confidential SurveyMonkey online poll of employees and freelancers were circulated and this time, they included disability and ethnicity data.

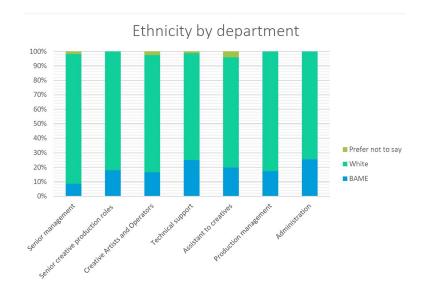
According to them, it is indeed a male dominated world in the VFX and postproduction but more equal gendered in animation. It is also dominated by white from mid and upper classes in all three sectors. I also found more interesting demographics:

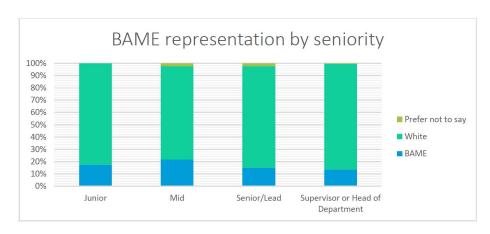
The following data are from 2019 survey. This survey take into account UK demographics data per region. There is difference of diversity representation within departments of each sector and my analysis tried to concentrated (although data is not always available) on the <u>Artists and Operators departments</u> as our MA course provide training to <u>Artists and Technical Artists</u> who will work in these departments.

• Ethnicity (BAME and Citizenship): People of colour are underrepresented across all three sectors, with VFX showing particularly low representation in creative artist roles.

In post-production there are higher proportions identifying as Black African, Black Caribbean and Mixed White/Black Caribbean than any other. The Black and Black Mixed population is less well represented in VFX, where the most numerous BAME populations are Asian Indian and Asian Chinese. Within animation, the highest BAME category represented was 'Other Mixed Ethnicity'.

The survey found that 95% of skilled VFX/animation workers from Europe are white, compared to 55% among non-EEA skilled migrants, who include sizable Indian and Chinese nationals.



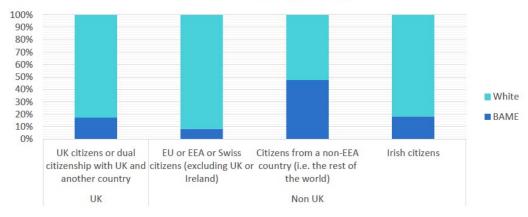


• **Gender**: Gender imbalance is stark in VFX. While animation shows more balanced representation (49%), VFX department have the lowest proportion of women (27%). This mirrors findings from the 2018 Workforce Survey (also at 27%). In post-production, women make up just 34% of Creative Artist and Operator roles. There is a common pattern across all three sectors when it comes to representation of women in senior and mid-level roles. Men are more likely to be found in senior roles or mid-level roles (54%) compared to women (44%). These statistics echo the statutory Gender Pay Gap quartile reporting by large companies in our sector, which show many more men than women being employed in the top 25% of roles which attract the highest salaries.

Table 2 - Comparison of 2018 and 2019 data on gender

Sector	Percentage of Women					
	UK Screen Alliance Workforce	UK Screen Alliance Inclusion				
	Survey 2018	Survey 2019				
Animation	40%	51%				
VFX	27%	34%				
Post Production	28%	46%				





According to them, we should trust more the 2018 Survey as the data has been provided by HR and are more accurate with bigger sample size of 5,400 freelances and employees.

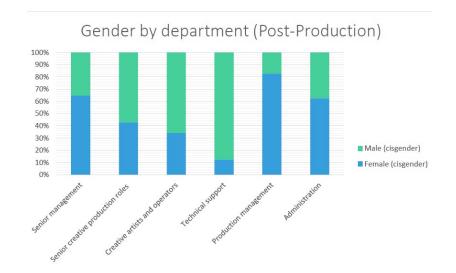
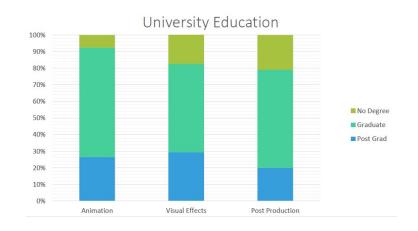


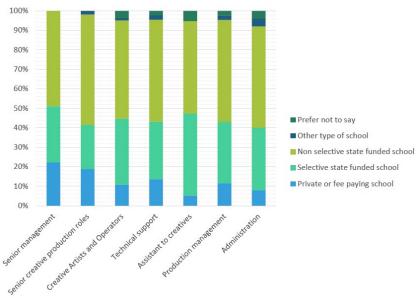
Table 3 – Reported Gender Pay Gap data 2018/19 from the largest VFX and post-production companies

Employer	Employer Size	% Difference in hourly rate (Mean)	% Difference in hourly rate (Median)	% Women in lower pay quartile	% Women in lower middle pay quartile	% Women in upper middle pay quartile	% Women in top pay quartile	% Who received bonus pay (Women)	% Who received bonus pay (Men)	% Difference in bonus pay (Mean)	% Difference in bonus pay (Median)
DELUXE 142	250 to 499	12.9	12	37.5	40	28.8	24.1	30	29.2	27	-3.9
DOUBLE NEGATIVE	1000 to 4999	23	29.8	40.2	28	18	16.5	5.9	7.6	-61	-179.8
FRAMESTORE	1000 to 4999	21.1	24	37	30	23	15	13.5	8.4	-5.1	-5.6
MOVING PICTURE COMPANY	500 to 999	31	33.3	42.5	35	20.4	13.6	8.8	16.2	34.7	-36.2
THE FARM POST PRODUCTION	250 to 499	-1.1	15	33	24	22	25	7	7	30.4	-88.5
THE MILL	250 to 499	28	31	38.7	41.9	23.9	16.3	32.2	18.5	72.7	43.2
INDUSTRIAL LIGHT & MAGIC (UK)	500 to 999	25.6	28.4	40.9	16.5	13.4	11.1	58.7	64.9	-7.6	32.5

• Education and Socioeconomic Background: Workers in VFX are more likely to come from privileged educational backgrounds. The VFX, animation and post-production workforces are educated to a very high level, with 85 % having a degree or post graduate qualification. The highest sub-sectoral percentage of graduates is in animation (93%) and the least in post-production (79%). VFX has the highest percentage with post graduate degrees (29%). This suggests that many in the sector have benefited from access to high quality education and resources, including STEM training. It's reported by Access:VFX that people from working-class face less incentive to pursue career in STEM dominated field.







2- WOULD SOFT SKILLS (SPECIALLY STEM RELATED) BE A KEY TO INCREASE DIVERSITY IN THESE 3 SECTORS?

I couldn't find data showing direct cause-consequence between soft skills and increase in diversity, but I can interpret the finding data by following this logical conclusion:

- 1- Soft skills training in higher education things like communication, collaboration, confidence, adaptability, leadership, empathy, and self-advocacy is not just about employability but providing equity. It's also a diversity enabler in VFX, animation and post-production because it:
 - lowers cultural and social barriers to entry,
 - supports inclusion once people are inside, and
 - broadens who succeeds and stays in the industry.
- 2- STEM fields are dominated by cis male, white and from mid/upper classes. That creates structural disadvantages for under-represented groups including women, ethnic minorities, neurodiverse, disabled, and lower-income students even when they *technically qualify*. Soft skills could empower people of diverse background through confidence, communication, teamwork dynamics, and navigating workplace culture.

3- Improve collaboration and Inclusion: VFX, animation and post-production are deeply collaborative. Pipelines involve artists, coders, producers, sound designers, editors, and clients.

Soft skills training (active listening, teamwork, inclusive communication) builds respectful interdisciplinary collaboration, making it easier for diverse voices to be heard and valued.

4- And finally, as professional with 15 years of experience, female, immigrant, speaking English as second language and non-white, in many sectors including VFX, post production and animation, I can effusively state that STEM soft skills helped me to survive and sometimes stand out from my white male counterparts.

I also believe in self-reliance and resourcefulness as One can do what is within one's own reach. This can also be thought in terms of Circles of Control.



"7 Habits of Highly Effective People", Stephen Covey

Circle of Control: I can control my teaching to nurture an environment that value soft skills development.

Circle of Influence: I can influence my students to hone their soft skills in their projects and daily activities.

Field of Concern: I cannot control whether the industry will hire my students independently of gender, ethnicity or background culture.

3- IS IT WORTHWHILE TO RESTRUCTURE THE MA COURSE TO NURTURE SOFT SKILLS, PARTICULARLY STEM RELATED?

Yes and below are my findings giving citations from related documents.

A- Graduates (and professionals) lack Art, STEM and soft skills in VFX and related industries:

- "The Mill co-founder and chief creative officer Pat Joseph: Students aren't graduating with the right skills for a career in the UK's burgeoning vfx industry: There's a real need for students to be made aware that STEM subjects and Art are both important for VFX, and we need to ensure that the quality of graduates meets our need to continue producing high quality and technically challenging work. From the start, The Mill has always believed in getting brave work made, backing client's ideas, solving their problems and producing flawless VFX, but we can only do this by supporting the next generation of talent. "(February 2014 Televisual Article)
- There are considerable skill gaps in VFX and Animation sectors according to the **Annual ScreenSkills Assessment** August 2019, page 39, and they are highly associated to soft skills:

Annual ScreenSkills Assessment 2018-19

Figure 40: Existence of skills gaps in existing workforce or freelancers worked with. Subsectors (n = 418)

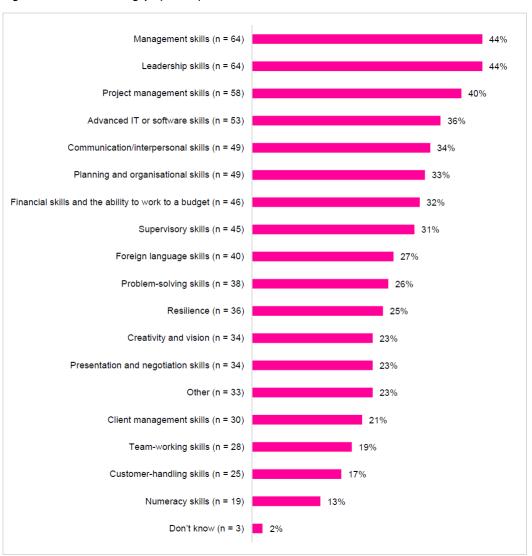
	Skills gap	No skills gap	Don't know
	%	%	%
AII	35	57	9
Film	31	61	8
- Film Production	38	55	7
- Film Exhibition	26	68	7
- Film Distribution	25	58	17
High-end TV	39	51	10
Unscripted TV	38	59	4
Children's TV	23	59	18
Animation	48	52	0
VFX	42	50	8
Games	37	61	3
Other	32	42	26

Source: ScreenSkills Employer Survey (2019).

"Part of the problem is perceived as being the lack of work preparedness of new labour market entrants (Work Foundation, 2017). These gaps do not relate to job specific or technical skills, but in areas such as: soft skills, variously referred to as "personality", "having the right attitude", but also to "have initiative" and "be a self-starter"; technical engagement was seen as very important, particularly in front-line technical production and post-production roles; broader knowledge of the film and screen industries and the production process; and the ability to work collaboratively and excellent communication skills."

Annual ScreenSkills Assessment 2018-19

Figure 46: Nature of skills gaps (n = 146)



Source: ScreenSkills Employer Survey (2019). *Note: multiple responses allowed.

- Across the digital content production sectors*, this Study found substantial gaps in people skills. Employers from the animation, VFX, post-production, and emerging tech sectors are finding that people skills, such as adaptability and teamwork, are particularly lacking in recent graduates at the entry level who have less industry experience of working across multiple workflows. Gaps in people skills are particularly relevant given the constantly and rapidly changing nature of the digital content production sectors, largely driven by technological advances like AI and machine learning, among others (see section 4.1). Therefore, there is a need for skilled talent that can adapt to the rapidly changing sectors, work collaboratively, and are self-starters. Such talent is then able to develop the cross-disciplinary skills required to navigate a dynamic and rapidly changing set of industries. (December 2023, Skills Scoping Study for the UK's Digital Content Production Sectors, British Film Institute and Olsberg SPI)
 - * Animation, Post production, games, VFX, emerging Tech

B- Heavy reliance of overseas labour due to difficulty finding domestic talent with above skills

- STEM skills inquiries are a recurring theme in UK politics, reflecting their importance to national economic growth, innovation, and competitiveness. VFX and animation industries are increasingly recognized as part of the STEM ecosystem in UK policy, particularly when their work involves advanced digital technologies. The UK Government's Creative Industries Sector Vision (2023) includes VFX and animation as key contributors to the digital economy, with potential to generate £50 billion in GVA by 2030.
- For policy and funding purposes, there is a push by Screen Industries and Digital Content Production Sectors to include them under STEM, especially when advocating for skills development, immigration policy, and education reform. For Instance, Seetha Kumar, CEO or Creative skillset (now ScreenSkills, the industry-led skills body for the UK's screen-based creative industries) in 17 April 2018 submitted a letter to the UK Parliament Public Accounts Committee on 'Delivering Stem Skills for the Economy Enquiry' during the Brexit process. He states that over 40% of VFX staff in the UK are from outside the UK and Ireland. On the Introduction the citation is:
 - A ready supply of people with advanced STEM skills is vital to the success of the creative industries this sector is the third biggest employer of STEM graduates in the UK after healthcare and construction. And the success of the UK in producing movies and high-end TV programmes, plus the emergence of innovations in areas such as Virtual Reality, Augmented Reality and immersive technology means that we need more and more of these people. And not only do we need people with STEM skills, but we need many of them to combine that with creative skills too it is the combination of technical and creative skills that makes films like Paddington 2 (a great British success) possible.
- Steps being taken to tackle labour shortages European Commission Research in 2015 suggested that the digital skills gap is larger in the UK than anywhere else in Europe, with 250,000 ICT job vacancies expected by 2015. A large proportion of the job titles requesting to be put on the SOL for the Creative Industries are those which require STEM skills, for example within video gaming, VFX, and animation. Companies have to compete for high skilled roles which require IT skills with other higher paying industries, for example the financial sector. (MAC Review of SOL 2019, page 258). The shortage of qualified domestic talent has led to the inclusion of VFX and animation roles on the UK's Shortage Occupation List (SOL) in 2020 again and included every year. Now it is under the Standard Occupational Classification (SOC) code 2142: Graphic and Multimedia Designers. These roles span from junior animators to VFX supervisors and require advanced knowledge, critical thinking, and leadership capabilities—particularly at Levels 6 and 7 of the UK qualification framework.

4. HOW CAN I CHANGE MY CURRICULUM IN THE FIRST TERM TO ACCOMMODATE SOFT SKILLS DEVELOPMENT?

I have researched 3 delivery methods: flipped classroom, scaffolded classroom and hybrid. I have opted for the hybrid: scaffolded flipped classroom.

As scaffolding methodology, I have:

- Structured my course to gradually introduce and implement STEM soft skills usage through 3 stages: Awakening, Acknowledgement/Identification, Reflection and Discovery stages. These stages are filled with activities for students to apply their soft skills.
- Have created 2 extra tools to facilitate students' identification of their soft skills: Soft Skills Passport to be filled weekly and Padlet Journalling where students reflect on their work and talk about their soft skills.
- Created home assignments of easy and more advanced tutorials and readings so they can choose which ones to study according to their own level and ability to step outside of their comfort zone.

As flipped methodology, I have

• Created home assignments in the form of readings and video tutorials to have the students prepare for the coming class. This increases students' time on task outside of classroom, so they have more time to acknowledge and identify their own soft skills.