



Computer Games Sector – Labour Market Intelligence Digest

1. Background

Labour market data provided by the Office for National Statistics (ONS) do not provide the sectoral detail required by the Creative Media Industry and Skillset to identify and fill skills gaps and shortages¹. As a result the industry charged Skillset in 1999 with generating Labour Market Intelligence (LMI) to a sectoral level throughout the four nations, where possible.

The LMI presented in this Digest are a summary of those generated through Skillset's comprehensive research programme. The full reports for each source and more information about Skillset's research programme can be found by visiting www.skillset.org/research.

2. Size of Computer Games Sector²

Overall the Computer Games industry comprises around **485**³ businesses which are shared among three sub-sectors: games development, games publishing and games support companies (including those working in middleware, tools and technology).

The Computer Games industry comprises a variety of company sizes, with a similar proportion of very small and large companies in the sector. A quarter (25%) of companies in the Computer Games industry employ between 1 and 5 people, one in ten (11%) employ between 6 and 10 people, and two in ten employ each of 11 to 20 people (18%) and 21 to 50 people (21%). The remaining quarter (25%) of the industry has more than 50 people working for them, which includes the 5% with a workforce of more than 200. Almost all of the larger companies are either developers or publishers.

The global market for video games is projected to grow at an annual rate of 10.6% over the coming years to reach \$86.7 billion in 2014. The sector generated £2 billion in global sales and contributed £1 billion to GDP. Within this global market the video games development sector in the UK was the third largest in the world in 2008, after the USA and Japan although it has since fallen behind Canada and possibly South Korea.⁴ In

¹ This is in part due to the way in which industries in the UK's economy are classified e.g. TV and radio are combined and cannot be disaggregated, and freelancers are systematically excluded.

² Until otherwise specified, data are taken from the Skillset 2009 Employment Census, which excludes film production freelancers, photo imaging, publishing, advertising and freelancers not working on Census Day.

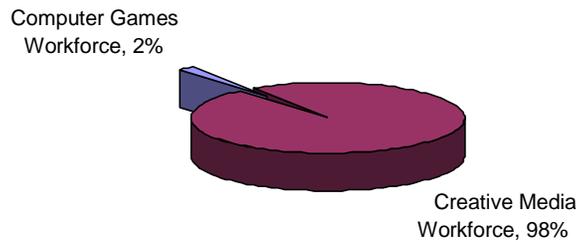
³ R.Gibson/NESTA (2010)

⁴ NESTA (2011) Next Gen. Transforming the UK into the world's leading talent hub for the video games and visual effects industries. Further information is also available at: www.ukie.info/the-industry

fact, research undertaken by TIGA in 2009 found that half of studios' leavers went overseas, 72% of them to Canada⁵.

A total of **7,000** people are employed in the Computer Games industry. As can be seen in **Figure 1** this is estimated to be 2% of the entire Creative Media workforce⁶.

Figure 1 Proportion of Creative Media Workforce in Computer Games



The Computer Games workforce is currently at its lowest since Skillset started measuring the size and shape of the industry in its Employment Census. During this period, the Computer Games industry workforce has fluctuated in size from 8,000 in 2002, rising to a high point of 9,400 in 2004, before steadily decreasing to 8,850 in 2006 and 7,000 in 2009 (**Table 1**).

In addition a recent study by TIGA reports that the UK Video Games industry has shed 900 jobs since 2008⁷.

Table 1 Size of Computer Games Workforce

	2009	2006	2004	2003	2002
Computer Games	7,000	8,850	9,400	7,900	8,000

Figure 2 illustrates the distribution of the workforce in Computer Games by occupation. The most common occupations are Art & Design, accounting for 1,700 (24%) of the workforce; Business Management accounting for 1,500 (22%) and Production accounting for 1,350 (19%). A significant proportion work in Technical Development - 950 people (13%). Other smaller occupational groups are Strategic Management (6%), Animators (6%), Content Development (3%) and Audio/Sound/Music (2%). All other occupations in total account for just 4% of the workforce.

No direct comparison to previous years is available due to a change in occupational classification – in 2006 the majority of the Computer Games workforce (78%) worked in Interactive or Games Production. Interactive or Games Operations (10%), Interactive or

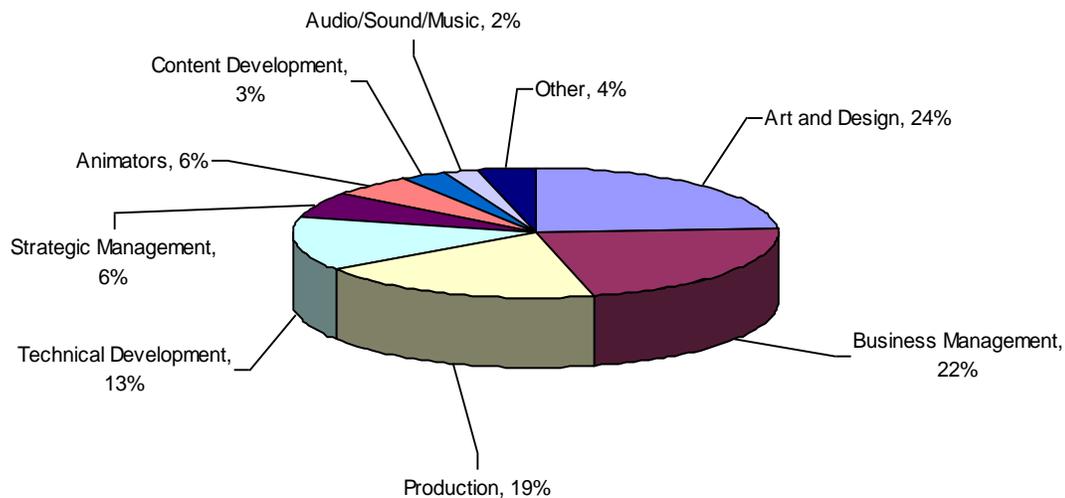
⁵ TIGA, State of the UK Video Game Development Sector (2009)

⁶ Until otherwise specified data for the Creative Media Industries as a whole taken from Skillset (2009) Employment Census, Skillset (2010) Creative Media Workforce Survey, and the Labour Force Survey Jan-Dec 2010.

⁷ www.develop-online.net/news/36261/Revealed-UK-dev-workforce-contracts-9

Games Business (8%) and 'other occupational groups' such as finance, HR, IT, sales and general management (11%) accounted for the rest of the workforce.

Figure 2 Distribution of the Computer Games Workforce by Occupation



As can be seen below in **Figure 3**, the Computer Games workforce is distributed more evenly across all nations and English regions than the wider Creative Media industries, where 46% are based in London. Amongst the Computer Games workforce just one fifth (19%) is based in London. The Computer Games workforce is distributed across the other nations and English regions with significant proportions in North West (30%), the East of England (18%), the East Midlands (8%) and Scotland (7%).

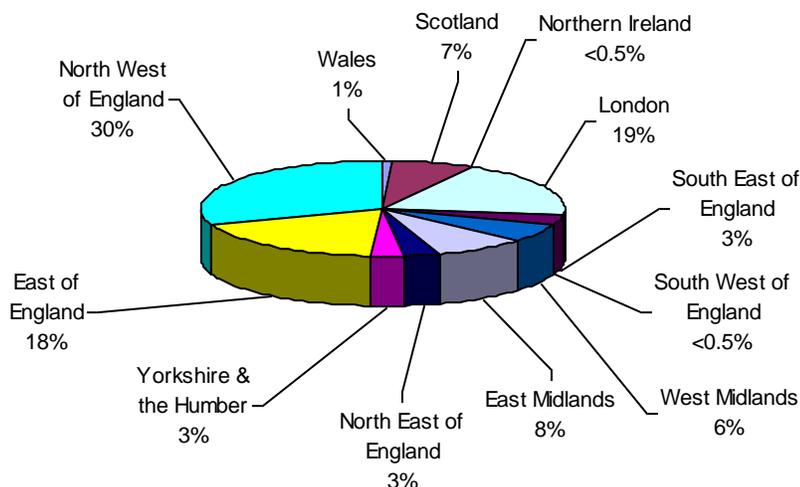
The relative proportion of the workforce based in London has increased since the distribution was last measured in 2006. A tenth (11%) of the workforce were based in London at the time of Skillset's 2006 Employment Census.

Interestingly with 2,150 workers the North West of England has the highest concentration of games developers of all regions followed by the West Midlands and East Midlands.⁸ Significant clusters exist in Guildford, Cambridge, Brighton, and Dundee, although the recent closure of Realtime Worlds led to a 60% reduction in the latter's head count.⁹

⁸ Ibid

⁹ Rick Gibson, When Clusters Implode, Develop November 2010

Figure 3 Distribution of the Computer Games Workforce by Nation/English Region



3. Shape of the Computer Games Sector

The Computer Games sector has a relatively low percentage of freelancers¹⁰; just 4% are freelance compared to 24% across the wider Creative Media industries¹¹. The proportion of freelancers in the Computer Games workforce has fallen in recent times - 8% of the workforce were freelancers in 2006 and 11% in 2004 (Skillset's Employment Census 2006 and 2004).

More than three quarters (77%) of Computer Games employers use freelancers (higher than the Creative Media average of 50%). Moreover, 29% of employers predict an increase in demand for freelance staff over the next 12 months.¹²

Representation of women in Computer Games is very low at 6%, compared with 39% of the wider Creative Media industries' workforce¹³ and 47% of the whole economy¹⁴. The proportion of women in the Computer Games workforce also stands at its lowest since Skillset started measuring the size and shape of the Computer Games workforce as part of its Employment Census. The proportion of women stood at 12% in 2006, having previously fluctuated from 8% in 2004 and 16% 2002.

¹⁰ For the purpose of this document, and the sources of these data, as agreed by industry 'freelance' is defined as an individual with a contract of fewer than 365 days and an 'employee' is defined as an individual with a contract of 365 days or more. For how long the individual has been freelancing and the mode of payment is not taken into consideration.

¹¹ Skillset 2009 Employment Census, Creative Media Workforce Survey 2010, and Labour Force Survey Jan-Dec 2010.

¹² Skillset (2010) Creative Media Employer Survey

¹³ Skillset 2009 Employment Census, Skillset 2010 Creative Media Workforce Survey and LFS Jan-Dec 2010.

¹⁴ Labour Force Survey Jan-Dec 2010

Individuals from a Black, Asian and Minority Ethnic (BAME) background make up just (3%) of the workforce in the Computer Games industry. This represents a very slight drop from 4% in 2006, prior to which Skillset's Employment Census (2002 onwards) estimated that the proportion of BAMEs in the workforce fluctuated between 3% and 5%.

This is lower than the 6% of BAME individuals in both the Creative Media workforce as a whole¹⁵, and in the working age population across the entire UK economy (9%)¹⁶.

7%¹⁷ of individuals working in the Computer Games industry consider themselves to be disabled as defined by the Disability Discrimination Act (DDA)¹⁸. This proportion is higher than that reported for Computer Games in 2008 (5%)¹⁹ though still lower than the 9% in the wider Creative Media workforce.²⁰

The Computer Games workforce has a younger age profile than that of the Creative Media workforce as a whole and the wider economy; more than three fifths (61%) in Computer Games are aged under 35 years compared with less than two fifths (39%) in this age group across the whole Creative Media workforce and 35% in the wider economy.

The proportion of the workforce aged under 35 years in 2010 is similar to that of 2008 (59%). However, both of these figures are significantly lower than that of 2005 (76%) which suggests that the Computer Games workforce may be ageing.²¹

Despite having a younger age profile, almost half (48%) of the Computer Games workforce are married or in a long-term relationship (significantly lower than the 59% reported in 2008). Even so this is still notably lower than in the wider Creative Media workforce where 60% are married or in a long-term relationship.²²

Just under a quarter (23%) of those working in the Computer Games industry have a dependent child under 16 years, similar to the 25% in 2008. This is lower than across the Creative Media workforce as a whole, where this is the case for one in three people (33%). It is also a lower proportion than across the whole economy, 36% of whom has a dependent child.²³

¹⁵ Skillset 2009 Employment Census, Skillset 2010 Creative Media Workforce Survey and LFS Jan-Dec 2010

¹⁶ Unless specified otherwise for the remainder of this document, data pertaining to the perspective of the UK economy as a whole are taken from the Labour Force Survey Jan-Dec 2010

¹⁷ Skillset 2010 Creative Media Workforce Survey

¹⁸ Disability, as defined by the Disability Discrimination Act (DDA), covers many people who may not usually have considered themselves disabled. It covers physical or mental impairments with long term, substantial effects on ability to perform day-to-day activities.

¹⁹ Skillset 2008 Creative Media Workforce Survey

²⁰ Unless specified otherwise for the remainder of this document, data pertaining to the perspective of the Creative Media workforce as a whole are taken from the Skillset Creative Media Workforce Survey 2010 and Labour Force Survey Jan- Dec 2010.

²¹ Skillset (2010, 2008 & 2005) Creative Media Workforce Survey

²² Skillset (2010 & 2008) Creative Media Workforce Survey

²³ Skillset (2010 & 2008) Creative Media Workforce Survey

Table 2 Diversity of the Computer Games Workforce

	Women	BAME	Disabled	35+	Dependent Children
Computer Games	6%	3%	7%	39%	23%
Creative Media	39%	6%	9%	61%	32%
UK economy	47%	9%	15%	65%	36%

4. Recruitment, Working Patterns and Career Development

Amongst Games employers who have recruited in the last 12 months, three in ten (29%) recruited from other Creative Media Industries compared to 38% that recruited from outside of the Industries (28% and 41% respectively amongst all Creative Media employers).²⁴

Just under half (48%) of Games employers recruit direct from education (whether school, college or university). This is slightly higher than the proportion of all Creative Media employers (45%).²⁵

Three fifths (61%) of the Computer Games workforce surveyed in 2010 entered the Creative Media industries from 2000 onwards, including 7% who started their first job in the Creative Media industries since the 2008. In addition, a quarter (25%) of individuals started between 1995 -1999.²⁶

Under a fifth (18%) of the Computer Games workforce said they had heard of their most recent job in the industry via an advertisement (compared to 31% of the entire Creative Media workforce). Acquiring a job through informal channels was also common reflecting the Games Industry's reliance on such methods; 16% heard about it from a friend or relative (16% of the wider Creative Media workforce), 14% made contact with the company (18% of the wider Creative Media workforce) and 12% heard about it directly from an employer (10% of wider the Creative Media workforce).²⁷ In addition, of those employers offering work experience/placements (which often leads to further employment) 71% organised them through personal contact with individuals.²⁸

The average working week consists of 5.0 days for the Computer Games workforce and 4.8 days for the wider Creative Media workforce, but the average working day for those in Computer Games is shorter, with a reported average of 8.4 hours per day compared with 8.7 hours across the wider Creative Media workforce. Neither the length of the average working week nor working day have changed significantly since 2008.²⁹

²⁴ Skillset (2010) Creative Media Employer Survey

²⁵ Ibid

²⁶ Skillset (2010) Creative Media Workforce Survey

²⁷ Ibid

²⁸ Skillset (2010) Creative Media Employer Survey

²⁹ Skillset (2010 & 2008) Creative Media Workforce Survey

The average income received by the Computer Games workforce in 2010 (£30,800) is similar to the average received by the Creative Media workforce as a whole (£30,500). This average has fallen significantly since 2008, when it stood at £37,400.³⁰

The incidence of unpaid working (excluding an occasional charitable contribution) is much lower within the Computer Games workforce than within the wider Creative Media workforce (24% and 40% respectively). This is lower than the corresponding figure from 2008, when 29% of the workforce reported having undertaken unpaid work.³¹

For eight in ten (82%) members of the Computer Games workforce, all of their work over the past 12 months has been based in the UK. This compares to 75% of the wider Creative Media Industries.³²

As shown in **Table 3**, three in ten (30%) members of the Computer Games workforce plan to move to a different job within the Industry in the next 12 months. A further 11% plan to move job but to a different Creative Media Industry though none of those responding plan on leaving the Creative Media Industries altogether.³³

Table 3 Anticipated changes to career in the next 12 months

Change in next 12 months	Computer Games Workforce	Creative Media Workforce
Move to a different job in same Industry	30%	20%
Move to a different job in different Creative Media Industries	11%	8%
Move to a different job outside Creative Media Industries	0%	7%
Become freelance	4%	9%
Broaden scope of freelance work	13%	27%
Change direction of freelance work	5%	14%
Expect to be made redundant	6%	7%
Temporarily leave current role (e.g. maternity leave or career break)	3%	5%

5. Qualifications in Sector³⁴

The Computer Games workforce is highly qualified, 63% has a degree, compared to 57% of the wider Creative Media workforce and 37% of the wider UK economy. However, this figure is significantly lower than in 2008 (80%) and closer to that reported in 2005 (68%). Approaching three in ten (28%) of the degrees held by those in Computer

³⁰ Skillset (2010 & 2008) Creative Media Workforce Survey

³¹ Ibid

³² Skillset (2010) Creative Media Workforce Survey

³³ Ibid

³⁴ Unless otherwise stated all data in this section is from the following sources: Computer Games from Skillset (2010 & 2008 & 2005) Creative Media Workforce Survey; UK economy from Labour Force Survey, January to December 2010; Creative Media from Skillset (2010) Creative Media Workforce Survey and Labour Force Survey, January to December 2010

Games are media related, a similar proportion as in 2008 (27%), and the same as those held by individuals across the wider Creative Media workforce (28%).

The most common media related subjects amongst the Computer Games workforce are: Animation/Computer Animation/3D/Electronic Imaging (44% of those with a media related degree), Computer Games (21%) and Art and Design/Graphic Design (20%). The most common subjects in other areas are: ICT Practitioners (42% of those with a degree in some other subject), Science (14%) and Crafts, Creative Arts and Design (9%).

Graduates came from a wide variety of institutions with the University of Teesside (9%) the most common followed by the University's of Manchester, Warwick and Wolverhampton (all 7%).

As shown in **Table 4** after those educated to degree level or above the highest qualification most commonly attained was a technical or vocational qualification (7%). None of those responding had attained a trade Apprenticeship as their highest qualification.

This level of vocational attainment was reflected in NESTA's Video Games Talent Survey which revealed that just 2% of those currently working in the industry arrived directly through a vocational education route.³⁵ Skillset worked closely with NESTA on the Next Gen Review. Skillset designed the Employer and Talent surveys and supplied comment and analysis on the FE and HE landscape to the report.

Table 4 Qualifications of the Computer Games Workforce

	Computer Games	Creative Media
A postgraduate qualification	21%	31%
An undergraduate degree, certificate or diploma	42%	37%
A Foundation degree	3%	1%
A technical or vocational qualification e.g. HND or HNC	7%	9%
A' level/GNVQ in Media Studies or related subjects	4%	2%
GCSE/O Level (or equivalent) in Media Studies or related subjects	2%	1%
National/Scottish Vocational Qualification (N/SVQ)	0%	1%
Modern Apprenticeship/Apprenticeship	0%	>0.5%
None of the above	14%	16%

³⁵ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

A majority of Computer Games employers (44%) report that they do not value formal qualifications. Meanwhile three in ten (32%) value undergraduate degrees, certificates or diplomas and 17% value postgraduate qualifications. A small proportion of employers value other types of qualifications such as technical or vocational qualifications (8%), Apprenticeships (6%) and Foundation Degrees (5%).³⁶ In contrast to this finding which suggests employers place little value on formal qualifications is the high level of graduate employment that currently exists within the workforce (63% are graduates as reported above).³⁷ This discrepancy might be attributable to a perception among employers that qualifications do not necessarily make new recruits to the sector 'job ready'. Recent research by Skillset into the destination of 2007/08 graduates also suggests that the likelihood of HE graduates finding employment within the Creative Media Industries within six months of graduation increases for students who have undertaken industry-specific courses.³⁸ It is difficult to say whether this is supply or demand driven as the process of recruitment is influenced by a complex set of factors including individual employer values and current labour market circumstances.

Amongst those employers who value graduate qualifications, over half (51%) stated a preference for these qualifications to be in media studies or a related subject, significantly higher than the wider Creative Media average of 40%. Just 9% preferred a non-media subject and a further 39% did not have a preference.³⁹

6. Supply and Provision of Learning and Development in Sector

In HE: 4,619 Content for Computer Games relevant courses exist across the UK and these courses were being studied by 90,360 students⁴⁰ in 2008/09. A below average proportion of these learners are female (24%), whilst 19% are BAME and 9% had an identified disability. In 2008/09 27,815 individuals attained a Games related qualification (consisting of 7,165 Postgraduate, 16,178 first degrees, 792 foundation degrees and 3,667 other undergraduate qualifications).⁴¹

In FE: we have identified 56 learning aims that are in some way relevant to the Games sector and these account for 2,037 learners in England in 2008/09. 51% of these learners are female, 17% are BAME and 14% had an identified disability.⁴²

³⁶ Skillset (2010) Creative Media Employer Survey

³⁷ Skillset (2010) Creative Media Workforce Survey

³⁸ 10% of employed HE graduates from 2007/08 who undertook Skillset-relevant courses found employment within Skillset industries, compared to 3% of all HE graduates who have found employment in Skillset industries. This increased to 34% for employed HE graduates of Skillset-accredited courses. DLHE Survey, HESA 2007/08 from Skillset/Research As Evidence (October, 2010)

³⁹ Skillset (2010) Creative Media Employer Survey

⁴⁰ The student count is the number who are studying courses whether in the first, middle, or final years of study. Both full time and part time students are included.

⁴¹ Figures from HESA 2008/09 quoted in Skillset/Research As Evidence (October, 2010) Mapping Creative Media and Fashion & Textiles Relevant Education and Training Provision in FE, HE, and the Private Sector in the UK.

⁴² Figures from Individual Learner Record (ILR) 2008/09 for England only quoted in Skillset/Research As Evidence (October, 2010) Mapping Creative Media and Fashion & Textiles Relevant Education and Training Provision in FE, HE, and the Private Sector in the UK.

In the private sector: Of the 7 providers supplying usable information regarding provision to the Games sector a total of 53 courses were identified. These courses most commonly covered development of online games and architectural product visualisation. Specific skills covered commonly included compositing, 3D Animation for Games, writer training and compositing and modelling.

STEM

Due to the ever increasing complexity of games products, either AAA console games with their realistic graphics (like Call of Duty, Resident Evil) or Apps and Mobile Games with the need for instant response and gameplay (like Angry Birds) the expertise of those programming the games has increased to meet demands caused by the game itself and the need for connectivity and availability across a number of platforms.

The demand for higher skills in programming comes as levels of Maths, Physics and Computer Science take up at Schools and universities has caused alarm for employers and educationalists alike.

This shortage has been exacerbated by some portions of the games industry expressing the opinion that some 'pure' computer science courses produce better talent than the many but variable games programming degrees.

The Government has been keen to promote the needs for increased STEM skills in students as illustrated by the push for Computer Science to replace ICT in school's curriculum, and the rising profile of organisations like STEMNET, a BIS funded network creating opportunities to inspire young people in STEM.

Whilst STEM has gained prominence as a key driver of computer games talent, there is also a growing understanding that coding alone isn't the solution; but rather how it is applied to imagery, manipulates it, and works with it to draw in the user. Thus, to highlight and not forget the value of art and design, several commentators have started to use the acronym STEAM where the A is for Art. A computer game is only an economic success if its imagery and animation matches and complements the code and circuitry it plays through; likewise a film's story is only realised through multiple hardware technologies.

"If the UK's creative businesses want to thrive in the digital future, you need people who understand all facets of it integrated from the very beginning...bring engineers into your company at all levels, including the top." Eric Schmidt, Chair of Google, MacTaggart Lecture, Edinburgh TV Festival, 27 August 2011. "You need to bring art and science back together."

The intermix of Maths and art and technology is seen as a priority, and the structures of our Universities sometimes necessitate against this happening with art and science faculties separate with distinct programmes and priorities that have no incentive to start the dialogues that might result in new hybrid provision. For instance, what are needed are programmers who are creative and flexible, and artists who can apply their skills to strict technological constraints.

A report by Universities UK declares that *“there is often a false opposition established between ‘creative’ subjects on one hand, and STEM subjects on the other. However, STEM skills are also needed in the creative economy, whether engineers in broadcasting or Maths and physics skills in computer games development. This is consistently overlooked in current debates that seek to polarise STEM and creative disciplines....Indeed, creative skills are needed in all industries, including those supported by the STEM disciplines. This clearly challenges a narrow view of STEM as the sole route to economic growth”*⁴³

*Perspective of Employers*⁴⁴

Over half (55%) of Computer Games employers fund or arrange learning or development for staff, compared to 47% of employers across the Creative Media Industries. This figure is significantly lower than the 69% of employers that provided learning or development in 2006⁴⁵. Approaching two thirds (64%) of Games employers who use freelancers also extend learning and development opportunities to them, significantly higher than the 59% across the wider Creative Media Industries.

NESTA’s Video Games Employer Survey also revealed that over half of employers responding had provided some form of training to their employees over the previous 12 months. Smaller companies tend to train their staff less often (25% of those with fewer than 5 employees); the percentage rises to over 80% for respondents with more than 25 employees. Video games companies are training their staff in technical skills such as maths, physics and programming, management skills, artistic skills, specific programming languages and software packages.⁴⁶

Amongst employers offering learning and development to staff, sending staff out to an external course or seminar (63%) and in-house training using an external contractor are common methods of delivery. Structured support on the job by another member of your workforce e.g. mentoring, coaching (54%) and ad-hoc non-structured support on the job by another member of their workforce (54%) were also relatively popular methods, with internet based/online training (36%) a less popular option.

⁴³ Creating Prosperity: the role of higher education in driving the UK’s creative economy, Universities UK (2010)

⁴⁴ Unless otherwise stated all data in the ‘Perspective of Employers’ sub-section are from Skillset’s (2010) Creative Media Employer Survey.

⁴⁵ Skillset (2006) Employer Survey

⁴⁶ NESTA (2011) Next Gen Review. Transforming the UK into the world’s leading talent hub for the video games and visual effects industries.

These methods of learning and development delivery are similar to those highlighted by NESTA – of those employers that provide training half do it internally through mentoring and coaching. A further 37% organise training sessions run by their own staff. Private sector providers play an important role in training with 44% of those companies training their workforce do so through private firms, particularly by sending their staff to external courses. Only 3% and 4% of respondents training their staff use the services of universities or colleges respectively.⁴⁷

17% of Computer Games employers have a learning and development plan for the year ahead (similar to the wider Creative Media Industries – 18%).

Over three fifths (63%) of Computer Games employers have seen no change to their learning and development budget over the past year (2009-2010). 19% had seen an increase, whilst a lower proportion (13%) had actually seen a decrease in their learning and development budget. These figures are all similar to those found across the wider Creative Media Industries (64% stayed the same; 16% increased and 12% decreased)

Skillset's (2010) Creative Media Employer Survey investigated employer usage of Apprenticeships, graduate internships and work placements/work experience posts. Approaching two fifths (18%) of Computer Games employers offer Apprenticeships, whilst 32% would consider doing so in the future. This marks a significant increase since 2006 when just 1% offered Apprenticeships, whilst 25% would consider doing so.⁴⁸ The proportion of employers offering apprenticeships is notably higher than across the wider Creative Media Industries (9%).

Graduate internships were more than twice as likely as Apprenticeships to be offered by Computer Games employers (41%). In addition, another 37% would consider offering an internship. The proportion of employers offering internships is significantly higher than across the wider Creative Media Industries (18%).

Three quarters (75%) of Computer Games employers offer or would consider offering work placements or work experience posts. This includes 55% of employers that already offer work placements/work experience posts, a similar proportion as in 2006 (52%)⁴⁹.

*Perspective of Workforce*⁵⁰

Over three quarters (76%) of the Computer Games workforce had received some form of learning and development in the past 12 months compared to 56% of the wider Creative Media workforce. This denotes a significant increase from the 59% in 2008 that had received some learning and development in the past 12 months.

Those in the Computer Games workforce who had undertaken learning or development over the past 12 months had completed an average of 13.8 days of learning and development during this time (lower than the Creative Media average of 19.6 days). This

⁴⁷ Ibid

⁴⁸ Skillset (2006) Employer Survey

⁴⁹ Ibid

⁵⁰ Unless otherwise stated all data in the 'Perspective of Workforce' sub-section are from Skillset's (2010, 2008 & 2005) Creative Media Workforce Survey.

is significantly higher than the average of 8.2 days in 2008 and 12.4 days in 2005.⁵¹

Table 5 lists the five most common areas in which learning and development had been received in the past 12 months. Management and leadership was a subject undertaken by 36% of the workforce. This was followed by art, design and creative (28%) and general software development skills (24%). In comparison, the most common areas of learning and development reported in 2008 were business skills (32%), management/leadership (30%), IT (24%), On-line/web design/interactive media/electronic games (15%) and specific software applications (14%).

Table 5 Most common areas of learning and development undertaken in the past 12 months

Subject	Computer Games	Creative Media
Management & Leadership	36%	13%
Art, Design & Creative	28%	2%
General Software Development Skills	24%	2%
Specific Software Package (s)	14%	19%
Copyright & Intellectual Property	11%	2%

Two thirds of the Computer Games workforce who had received learning or development in the past year had done so via their employer (66%, compared to 49% within the wider Creative Media workforce). A further 45% had received learning or development via a friend or colleague. Almost three in ten provided their own learning and development (28%, compared to 18% across the Creative Media Industries).

The most common delivery mode for the learning and development received by the Computer Games workforce was via the classroom (61%). This was followed by on the job e.g. mentoring (49%), books and other printed materials (28%) and online support reference material (27%).

Approaching two thirds (63%) of the Computer Games workforce look for information on learning and development via internet searches. The company training/HR department is also a major source of information in the sector (49% citing it as a source of information). A further 31% seek information through their manager, 29% cite their company intranet and 24% from their colleagues.

Barriers to Learning/Development

Almost three fifths (58%) of Computer Games employers said that there were particular reasons preventing them from providing more learning and development for their workforce (higher than the 50% amongst employers in the wider Creative Media Industries). The most frequent reasons cited include 'not enough time' (50%), 'employees are already fully proficient' (40%), and 'company cannot afford to invest in

⁵¹ These differences may in part be due to a change in question text in the 2010 survey. Learning and development now being referred to in questions rather than 'training' which was used in 2008 and 2005. A note was added in the 2008 survey to include all types of structured self-tuition and on-the-job training so differences should be minimised.

training' (39%).⁵² The proportion of employers reporting barriers to providing learning and development in 2006 was notably lower than in 2010 at 48%. As in 2010, the most frequent reasons cited were 'too costly' (58%) and 'not enough time' (44%).⁵³

Similarly NESTA's Video Games Employer Survey also highlighted lack of time (21% of all respondents) and courses being too expensive (15%) as the most common obstacles. Overall, 51% of employers responding reported barriers to training.⁵⁴

As shown in **Table 6**, approaching nine in ten (86%) of the Computer Games workforce who had tried to access learning or development, or information regarding it have experienced barriers to access. This figure is slightly less than the wider Creative Media workforce (88%) but marks an increase from the 78% recorded amongst the Computer Games workforce in 2008 and 72% reported in 2005.⁵⁵

The most common obstacle cited was a lack of availability of materials online (28%). This was followed by a lack of suitable opportunities in the UK (23%) and difficulty in assessing the quality of courses (23%). These obstacles differ from those identified in 2008 as the most common – fees were too high (42%), lack of suitable courses in the region where workforce live (37%) and lack of information about courses available (37%).⁵⁶

Table 6 Barriers to Learning/Development reported by the workforce

Barrier to Training	Computer Games	Creative Media
<i>Any barriers or obstacles</i>	86%	88%
Lack of suitable courses/training in UK	23%	12%
Lack of suitable opportunities in the region/nation I live/work	2%	19%
Possible loss of earnings too high a risk	9%	10%
Fees are too high	9%	46%
Opportunities available are in inconvenient places	0%	19%
Opportunities available are at inconvenient times	9%	18%
Domestic/personal arrangements	13%	11%

⁵² Skillset (2010) Creative Media Employer Survey

⁵³ Skillset (2006) Employer Survey

⁵⁴ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

⁵⁵ Skillset (2010, 2008 & 2005) Creative Media Workforce Survey

⁵⁶ Skillset (2010 & 2008) Creative Media Workforce Survey

Barrier to Training	Computer Games	Creative Media
Fear of losing work through committing time in advance	0%	16%
Lack of available information	21%	16%
Lack of availability of materials online	28%	9%
Difficult to assess the quality of courses	23%	27%
Employers not willing to pay	2%	25%
Employers not willing to give time off for learning and development	5%	21%

7. Skills Shortages

Just under a third (31%) of Computer Games employers have current vacancies, and of these employers more than half (53%) report having hard to fill vacancies and hence skills shortages. The Computer Games average is higher than the Creative Media employer average of 46%.⁵⁷ The occupations in which these skills shortages exist most commonly are concentrated in Technical Development roles (for 74% of Games employers).

Current vacancies were also highlighted in NESTA's Video Games Employer Survey. Over a third of respondents report difficulty filling vacancies at all levels of the business though that percentage rises steeply for larger companies (75% for companies employing 100+). The main reasons given for this are a lack of suitable candidates, and the fact that candidates lack the required technical skills and sufficient industry experience.⁵⁸

Skills shortages were prevalent in computer programmers (mentioned 52% of the times), followed by artists (13%), designers (10%) and management personnel (7%). There seem to be particular difficulties in finding programmers and animators with skills in online development. There are also constraints in the supply of personnel with the right mix of technical and artistic skills and artists proficient in 3D.⁵⁹

Three in ten (31%) of respondents to NESTA's Video Games Employer Survey report that skills shortages are having a real impact on their business. They include delays and quality issues (mentioned by 13% of respondents), difficulties expanding and loss of business (both 7%). The situation is worse within larger companies with 35% reporting

⁵⁷ Skillset (2010) Creative Media Employer Survey

⁵⁸ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

⁵⁹ Ibid

that shortages are leading to delays and quality issues and 17% are recruiting from overseas to fill vacancies.⁶⁰

Computer Games employers also highlighted a number of skills that they found difficult to obtain in applicants direct from education. Broad skills areas most commonly cited are leadership and management (41%), creative talent (23%), multi-skilling (14%) and skills in using sector specific software packages (14%).⁶¹

Skills needs amongst applicants direct from education were also highlighted in NESTA's Next Gen report. Approaching three fifths (58%) of all respondents reported that there are positions where it is particularly difficult to find recruits straight from education with the required skills. The hardest positions to fill were computer programmers (43%) followed by designers (16%), artistic roles and project management roles (both around 7%). Many employers recruiting from education stress important shortcomings in university applicants, with particular emphasis around the lack of expertise with the gaming platforms they target, technical skills in areas ranging from maths to programming and management skills.⁶²

Consistent with this, almost 35% of respondents to NESTA's Talent Survey working in the video games industry reported that they now know that their course lacked industry-relevant skills. In addition, 68% of graduates complain that their course was weak in equipping them with commercial skills and just over half (51%) say the same about project management skills.⁶³

The proportion of graduates in the UK developer population is slowly increasing. However, only 18% of games specific graduates in 2007 succeeded in gaining jobs in the industry. The quality of undergraduate programmes seems to be key: graduates from courses accredited by Skillset are nearly three times more likely to get a job in the Content for Computer Games sector than those from a non-accredited course.⁶⁴ UK Games companies also recruit from those with traditional degrees in computer science, maths, visual arts and general science courses. However, the predicted gradual decline in UK games development staff numbers over the next five years is expected to reduce the intensity of the skills shortage, with a predicted move to the need for cross platform skills, android development and self-publishing with online micro-transaction capability.

Recent research undertaken by NESTA with recruitment agencies and headhunters revealed that almost one-quarter of UK video games talent placed by recruitment agencies has been to overseas companies. Agencies had over the previous year placed roughly the same amount of overseas talent into the UK, suggesting that net emigration is a lot smaller. But these numbers mask the 'cherry picking' of the UK's more experienced video games talent. Of the 13 video games recruiters actively involved in

⁶⁰ Ibid

⁶¹ Skillset (2010) Creative Media Employer Survey

⁶² NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

⁶³ Ibid

⁶⁴ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

making international placements, almost a third highlighted the high skills level of UK candidates as being their big draw.⁶⁵

8. Skills Gaps

*Perspective of Employers*⁶⁶

Three in ten (30%) Computer Games employers report a skills gap within their current workforce, slightly higher than the Creative Media employer average (28%). This does however mark an increase from 2006 when 24%⁶⁷ of Games employers reported a skills gap in their current workforce. The most common areas in which skills gaps exist are leadership and management, sales and marketing and finance skills. These skills gaps were most frequently associated with technical development and art and design roles.

This level of skills gaps was also reflected in NESTA's Video Games Employer Survey, in which a third (33%) of employers reported that their workforce needs an upgrade in skills. This figure increases to 65% in the case of larger companies (100+ employed).⁶⁸

The attraction of high wages and more stable / better financed companies has led to some 'brain drain' to North America, particularly in relation to senior developers and managers. However the UK has also benefited from immigration, particularly from Eastern Europe.⁶⁹

In the new digital marketplace where there are few barriers to entry, and fewer and fewer gatekeepers, skills such as Search Engine Optimisation (SEO) and ways to ensure 'discoverability' are at a premium. Whilst large companies may have whole departments to deal with this sort of marketing, the individuals in creative industry SMEs, Sole Traders and micro-companies will increasingly need to assimilate these skills into their everyday work. The ability to marshal social media and start conversations with your customers are also valuable to small enterprises.

*Perspective of Workforce*⁷⁰

Three in ten (31%) of the Computer Games workforce have current learning or development needs. Over half (51%) do not have any needs and the remaining 18% said that they do not know. There could be a variety of reasons behind an individual not being clear on their own development needs, including possible employer input into their learning and development plans, current/impending changes to their job role or lack of clarity over skills required for their role/a particular task.

⁶⁵ Ibid

⁶⁶ Unless otherwise stated all data in the 'Perspective of Employers' sub-section are from Skillset's (2010) Creative Media Employer Survey.

⁶⁷ Skillset (2006) Employer Survey

⁶⁸ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

⁶⁹ Skillset (2008) Creative Media Workforce Survey and NESTA 2008 *Raise the Game: The competitiveness of the UK's games development sector and the impact of governmental support in other countries*

⁷⁰ Unless otherwise stated all data in the 'Perspective of Workforce' sub-section are from Skillset's (2010, 2008 & 2005) Creative Media Workforce Survey.

As noted, just over three in ten of the Computer Games workforce have current learning or development needs in 2010. As shown in **Table 7**, this is significantly lower than the 54% reported across the wider Creative Media workforce. This is also lower than the proportion of the Games workforce reporting a learning or development need in 2008 and 2005 (both 47%).

Table 7 % of Workforce with Learning or Development Need

	2010	2008	2005
Computer Games	31%	47%	47%
All Creative Media	54%	51%	62%

Table 8 lists the five most common areas of learning and development needed as reported by the Computer Games workforce. Management and leadership (64%) was the most common subject needed. Computer skills in a variety of specific software packages (29%) and career development and keeping up to date with industry changes (both 13%) were also common.

The areas of learning and development need most commonly cited by the Computer Games workforce in 2008 were business skills (39%), management/leadership (29%), IT (21%) and specific software applications (17%). Though there are some changes between these and those reported in 2010 it is clear that the type of skills needed are focussed in similar areas.

Table 8 Most common areas of learning or development needed

Subject of training	Computer Games	Creative Media
Management and Leadership Skills	64%	10%
Computer Skills - Specific Software Package(s)	29%	20%
Career Development	13%	2%
Keeping up to date with industry changes	13%	3%
Sales & Marketing	11%	6%

Two thirds (66%) of the Computer Games workforce cited 'manage and leading your team' and the need to 'further develop existing skills base to acquire new work' as the main reasons for their current learning and skills development needs. These were followed by 'increased demand for quality content' (41%) and 'demand of increased commercial pressures' (40%).

These findings are supported by NESTA's Video Games Talent Survey. Of the 46% of respondents with current training needs, 43% say that they need to upgrade their skills because they will have to manage a team in the future, while 32% highlight the need to develop their commercial skills. In addition, four in ten members of the workforce say that their training needs are a consequence of higher levels of competition, while 36%

and 33% respectively link them to increasing demand for content on multiple platforms and demand for higher quality content.⁷¹

Future Skills Gaps

Skillset's 2010 Creative Media Employer Survey asked employers to identify any potential future skills gaps. Interestingly Computer Games employers predicted that there would be gaps in a wide variety of broad skills areas: Leadership and management (mentioned by 37% of employers), sales and marketing (31%), multi-skilling (29%), technical skills (28%) and skills to develop content for multiple platforms (28%).⁷²

Within the broad category of 'technical skills', Games employers were most likely to specifically mention computer programming (18%). Likewise within 'skills to develop content for multiple platforms' there were a huge variety of specific potential future skills gaps mentioned, the most common relating to design and development of games and mobile applications.⁷³

The multiplicity of screens/platforms through which people can consume content is an ever increasing driver for the industry. Most notably, Smart TV or Over The Top (OTT) TV promises a new way for games and interactive media to permeate into the family living room - a combination of various content in one portal e.g. games, films, TV, internet, shopping, news all in one place. This will change the way media/content is consumed, examples include Ultraviolet and GoogleTV.

As well as convergence, divergence is also a driver within Games with the number and variety of platforms and screens for content ever increasing. For example, Sony have just launched PSVita a mobile game platform as their PS3 consoles decline, and Nintendo, makers of the previously massively successful Wii, reported a loss in the last financial year at least in part because of the increased use of gaming on Smart Phones.

The mobile and Apps space has allowed Games developers to become publishers. New entrants need to be protected by awareness of IP, monetisation, microtransactions, business models like freemium, SEO, licensing, and marketing knowledge.

⁷¹ NESTA (2011) Next Gen Review. Transforming the UK into the world's leading talent hub for the video games and visual effects industries.

⁷² Skillset (2010) Creative Media Employer Survey

⁷³ Ibid