Department for Education

Assessing the Further Education Vocational Qualifications Market in England

Annex of detailed analysis

July 2017

Frontier Economics

GSR
GOVERNMENT SOCIAL RESEARCH
Social Science in Government

Contents

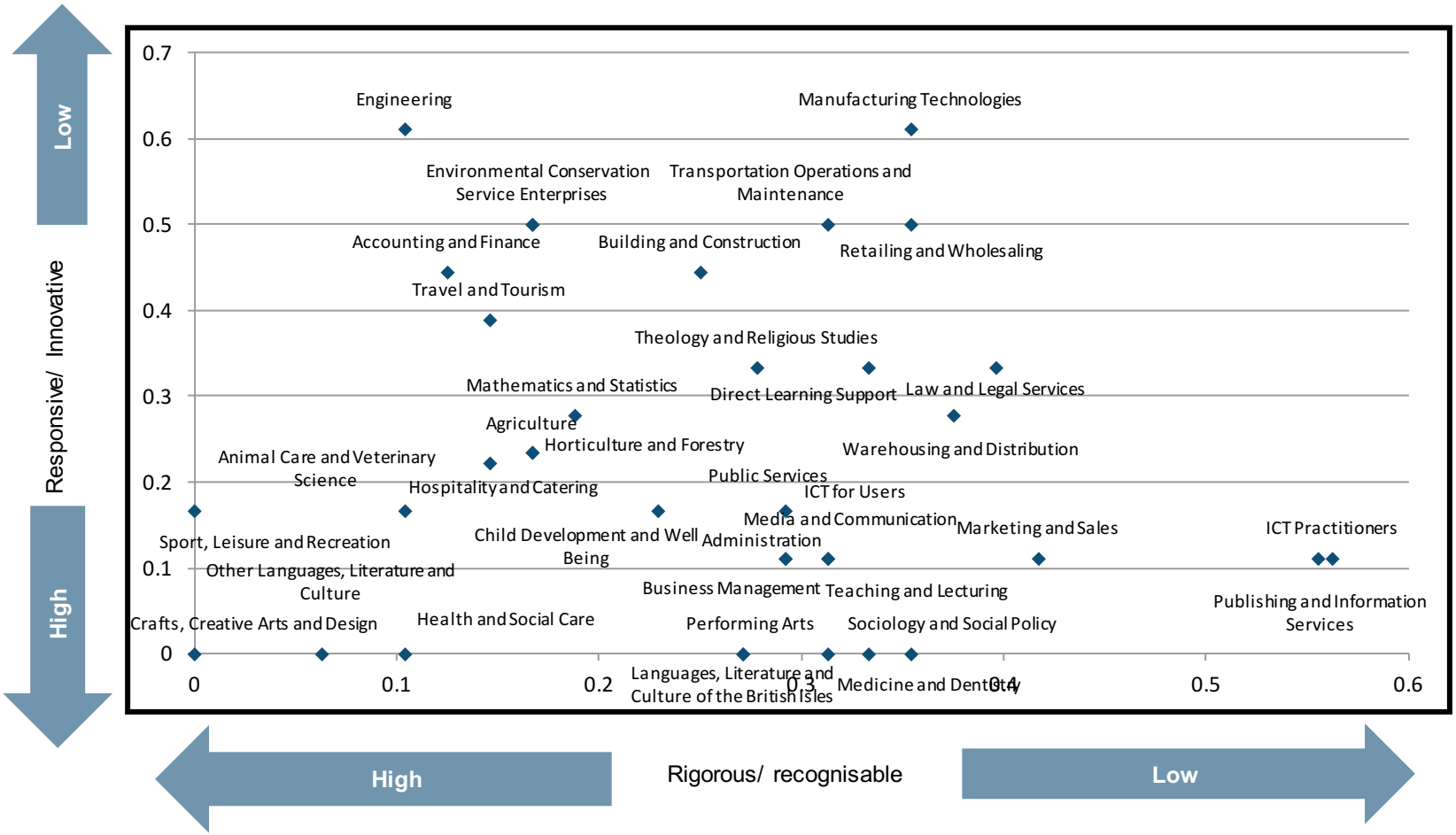
List of figures

List of tables

Indicators

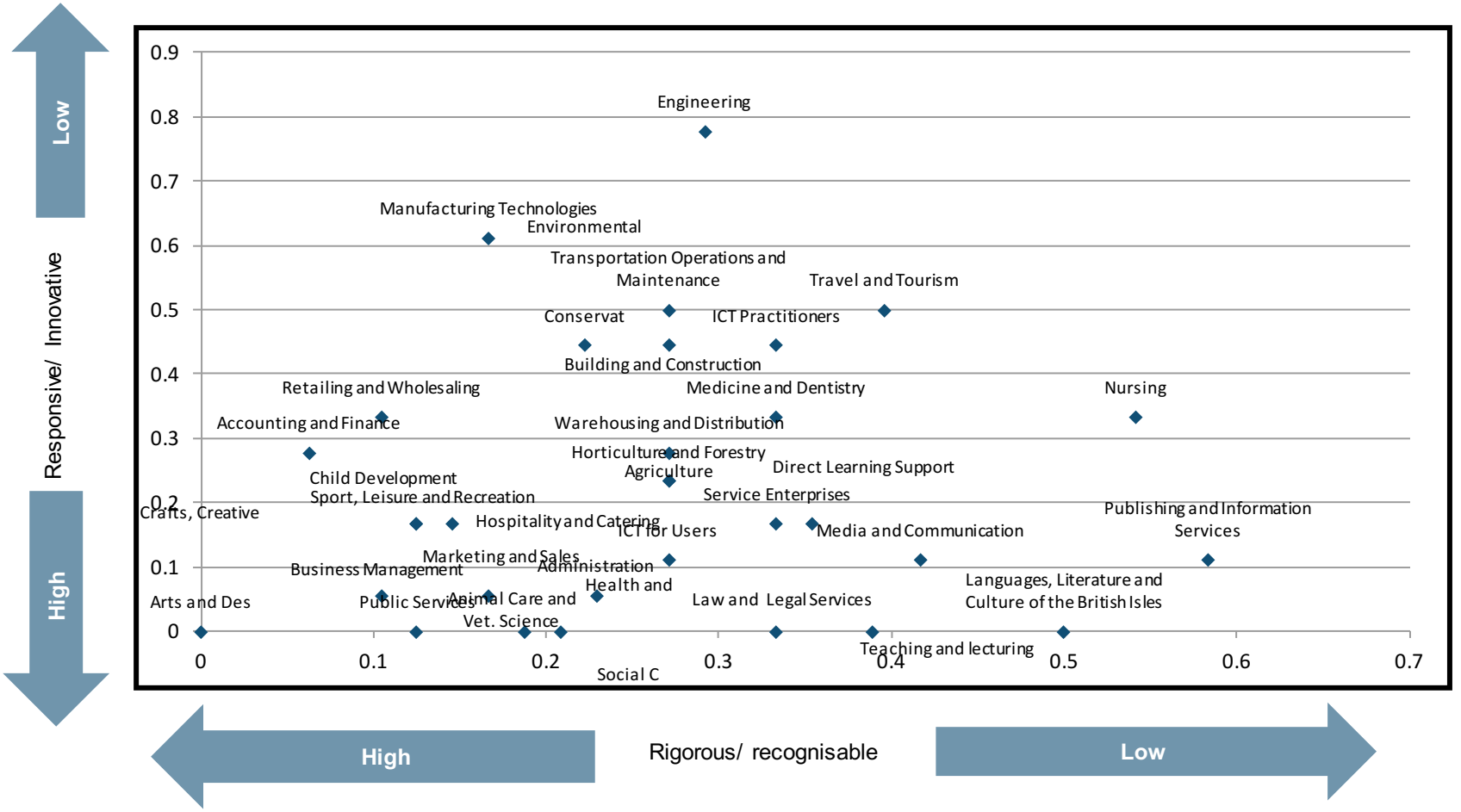
Scatter plots

Figure 1: Overall performance for young general VQs



Source: ILR, ESS and EPS

Figure 2: Overall performance for apprenticeships



Source: ILR, ESS and EPS

Tables of indicators

Table 1: Individual indicators for adult general VQs (rigorous/recognisable)

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employment	% Sustained learning or employment	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Foundations for Learning and Life	419,900							7%	-20%	46%	61%			819	506	8%	
Health and Social Care	266,150	4%	3%	6%	4%	8%	25%	7%	-42%	74%	80%	61%	76%	959	305	24%	35%
Building and Construction	122,000	9%	6%	13%	2%	13%	34%	-1%	-32%	47%	53%	63%	67%	980	169	26%	42%
Preparation for Work	113,400							18%	-61%	40%	45%			930	108	9%	
ICT for Users	83,300	5%	5%	9%	1%	14%	35%	16%	-66%	48%	54%	68%	70%	870	187	55%	48%
Administration	75,550	3%	2%	7%	3%	15%	18%	8%	-67%	60%	64%	59%	67%	895	380	39%	48%
Business Management	71,600	3%	2%	7%	3%	15%	18%	-2%	-37%	73%	77%	59%	67%	940	82	22%	48%
Hospitality and Catering	64,450	2%	4%	4%	3%	15%	29%	-1%	-55%	58%	64%	61%	62%	702	469	75%	57%
Service Enterprises	63,200	1%	4%	4%	2%	5%	16%	-1%	-33%	57%	68%	66%	76%	962	248	57%	18%
Engineering	51,050	4%	3%	4%	4%	17%	30%	8%	-30%	70%	77%	63%	73%	952	159	25%	49%
Sport, Leisure and Recreation	44,750	3%	2%	5%	3%	13%	18%	2%	-12%	65%	71%	62%	72%	931	262	58%	37%
Accounting and Finance	38,000	5%	3%	4%	2%	4%	16%	5%	-9%	67%	78%	62%	71%	730	23	55%	53%
Manufacturing Technologies	33,800	4%	3%	4%	4%	17%	30%	4%	-73%	69%	72%	63%	73%	791	238	4%	49%
Warehousing and Distribution	31,550	5%	5%	9%	3%	14%	35%	6%	-76%	64%	65%	68%	70%	822	218	36%	48%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employment	% Sustained learning or employment	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Direct Learning Support	30,700	1%	4%	4%	6%	5%	16%	0%	-1%	70%	77%	66%	76%	573	631	61%	18%
Transportation Operations and Maintenance	30,650	5%	5%	9%	3%	14%	35%	1%	-27%	42%	47%	68%	70%	938	221	42%	48%
Public Services	28,150	1%	3%	3%	4%	12%	23%	1%	-24%	57%	60%	65%	77%	936	233	37%	42%
Crafts, Creative Arts and Design	27,500	3%	2%	5%	3%	13%	18%	16%	-60%	47%	68%	62%	72%	953	66	42%	37%
Child Development and Well Being	27,300	4%	3%	6%	4%	8%	25%	-1%	-16%	59%	69%	61%	76%	839	374	66%	35%
Retailing and Wholesaling	22,950	5%	4%	5%	2%	12%	24%	8%	-85%	47%	52%	62%	68%	755	277	46%	60%
Teaching and Lecturing	20,500	1%	4%	4%	6%	5%	16%	0%	9%	69%	75%	66%	76%	888	307	18%	18%
Horticulture and Forestry	16,100	3%	3%	5%	1%	9%	36%	14%	-54%	49%	61%	76%	75%	962	93	48%	42%
ICT Practitioners	9,000	5%	5%	9%	1%	14%	35%	8%	-16%	42%	59%	68%	70%	896	41	54%	48%
Performing Arts	8,950	3%	2%	5%	3%	13%	18%	25%	-60%	50%	70%	62%	72%	955	4	43%	37%
Languages, Literature and Culture of the British Isles	8,050	1%	4%	4%	6%	5%	16%	29%	-35%	58%	76%	66%	76%	737	107	5%	18%
Animal Care and Veterinary Science	7,900	4%	3%	6%	4%	8%	25%	12%	-31%	55%	69%	61%	76%	936	166	36%	35%
Media and Communication	7,100	5%	5%	9%	1%	14%	35%	8%	-30%	49%	73%	68%	70%	931	59	53%	48%
Other Languages, Literature and Culture	5,950	3%	2%	5%	3%	13%	18%	20%	-54%	61%	73%	62%	72%	865	5	53%	37%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employment	% Sustained learning or employment	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Agriculture	5,000	3%	3%	5%	1%	9%	36%	8%	-48%	56%	67%	76%	75%	827	60	60%	42%
Science	3,150							14%	-23%	55%	83%			845		65%	
Travel and Tourism	2,900	2%	4%	4%	3%	15%	29%	12%	-20%	51%	68%	61%	62%	883	199	55%	57%
Environmental Conservation	1,800	3%	3%	5%	3%	9%	36%	-1%	-18%	64%	70%	76%	75%	649	110	13%	42%
Marketing and Sales	1,600	3%	2%	7%	3%	15%	18%	14%	-62%	68%	71%	59%	67%	832	56	13%	48%
Mathematics and Statistics	1,050	5%	3%	4%	2%	4%	16%	23%	-15%	63%	82%	62%	71%	772	200	8%	53%
Law and Legal Services	850	1%	3%	3%	4%	12%	23%	18%	-3%	53%	85%	65%	77%	784	15	47%	42%
Medicine and Dentistry	550	4%	3%	6%	4%	8%	25%	23%	-19%	56%	85%	61%	76%	610		37%	35%
Nursing and Subjects Allied to Medicine	350	4%	3%	6%	4%	8%	25%	11%	-34%	53%	71%	61%	76%	147		50%	35%
Publishing and Information Services	270	5%	5%	9%	1%	14%	35%	9%	-56%	61%	70%	68%	70%	239	31	78%	48%
Sociology and Social Policy	50	3%	2%	5%	3%	13%	18%	21%	-3%	52%	85%	62%	72%	302		19%	37%

Table 2: Individual indicators for adult general VQs (responsive/innovative)

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Foundations for Learning and Life	419,900									9%	33%
Health and Social Care	266,150	7%	6%	13%	13%	18%	9%	4.5	0.1	3%	45%
Building and Construction	122,050	11%	1%	12%	20%	36%	21%	11.4	0.1	4%	65%
Preparation for Work	113,400									23%	85%
ICT for Users	83,300	7%	3%	21%	24%	26%	11%	4.7	0.1	4%	42%
Administration	75,550	5%	4%	20%	21%	27%	14%	9.8	0.2	21%	42%
Business Management	71,600	5%	4%	20%	21%	27%	14%	15.6	0.3	5%	38%
Hospitality and Catering	64,450	2%	2%	9%	12%	30%	8%	6.6	0.2	2%	17%
Service Enterprises	63,200	6%	16%	13%	13%	31%	10%	22.7	0.6	7%	29%
Engineering	51,050	8%	2%	15%	22%	35%	24%	20.4	0.4	6%	31%
Sport, Leisure and Recreation	44,750	5%	7%	15%	12%	21%	12%	1.0	0.0	10%	31%
Accounting and Finance	38,000	5%	2%	23%	18%	21%	12%	11.4	0.3	1%	38%
Manufacturing Technologies	33,800	8%	2%	15%	22%	35%	24%	20.4	0.4	4%	25%
Warehousing and Distribution	31,550	7%	3%	21%	24%	27%	14%	22.7	0.6	16%	47%
Direct Learning Support	30,700	6%	16%	13%	13%	19%	8%	15.6	0.3	4%	4%

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Transportation Operations and Maintenance	30,650	7%	3%	21%	24%	38%	22%	22.7	0.6	3%	25%
Public Services	28,150	3%	10%	15%	13%	9%	6%	12.0	0.1	6%	54%
Crafts, Creative Arts and Design	27,500	5%	7%	15%	12%	21%	12%	1.0	0.0	5%	44%
Child Development and Well Being	27,300	7%	6%	13%	13%	18%	9%	4.5	0.1	4%	32%
Retailing and Wholesaling	22,950	2%	1%	12%	17%	31%	10%	22.7	0.6	7%	12%
Teaching and Lecturing	20,500	6%	16%	13%	13%	19%	8%	15.6	0.3	7%	60%
Horticulture and Forestry	16,100	8%	3%	14%	17%	34%	10%	7.4		4%	59%
ICT Practitioners	9,000	7%	3%	21%	24%	26%	11%	4.7	0.1	13%	25%
Performing Arts	8,950	5%	7%	15%	12%	21%	12%	1.0	0.0	16%	28%
Languages, Literature and Culture of the British Isles	8,050	6%	16%	13%	13%	19%	8%	15.6	0.3	11%	46%
Animal Care and Veterinary Science	7,900	7%	6%	13%	13%	18%	9%	15.6	0.3	22%	31%
Media and Communication	7,100	7%	3%	21%	24%	26%	11%	4.7	0.1	7%	29%
Other Languages, Literature and Culture	5,950	5%	7%	15%	12%	21%	12%	15.6	0.3	17%	31%
Agriculture	5,000	8%	3%	14%	17%	34%	10%	7.4		23%	37%
Science	3,150							15.6	0.3	9%	36%
Travel and Tourism	2,900	2%	2%	9%	12%	30%	8%	9.8	0.2	19%	30%

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Environmental Conservation	1,800	8%	3%	14%	17%	21%	13%	89.3	1.7	11%	33%
Marketing and Sales	1,600	5%	4%	20%	21%	27%	14%	15.6	0.3	2%	32%
Mathematics and Statistics	1,050	5%	2%	23%	18%	21%	12%	11.4	0.3	14%	74%
Law and Legal Services	850	3%	10%	15%	13%	9%	6%	15.6	0.3	35%	55%
Medicine and Dentistry	550	7%	6%	13%	13%	18%	9%	4.5	0.1	37%	59%
Nursing and Subjects Allied to Medicine	350	7%	6%	13%	13%	18%	9%	4.5	0.1	15%	52%
Publishing and Information Services	250	7%	3%	21%	24%	26%	11%	4.7	0.1	19%	22%
Sociology and Social Policy	50	5%	7%	15%	12%	21%	12%	15.6	0.3	77%	81%

Table 3: Individual indicators for young general VQs (rigorous/recognisable)

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Foundations for Learning and Life	396,850							-6%	-6%	33%	50%			675	524	10%	
Sport, Leisure and Recreation	72,700	3%	2%	5%	3%	13%	18%	1%	2%	57%	78%	62%	72%	941	67	67%	37%
Health and Social Care	66,200	4%	3%	6%	4%	8%	25%	-5%	36%	60%	80%	61%	76%	895	132	57%	35%
Building and Construction	59,500	9%	6%	13%	2%	13%	34%	-2%	-1%	57%	70%	63%	67%	945	36	7%	42%
Crafts, Creative Arts and Design	51,450	3%	2%	5%	3%	13%	18%	3%	-13%	45%	78%	62%	72%	852	158	64%	37%
Service Enterprises	43,800	1%	4%	4%	2%	5%	16%	-5%	1%	62%	68%	66%	76%	945	211	71%	18%
Business Management	42,350	3%	2%	7%	3%	15%	18%	8%	-19%	46%	81%	59%	67%	856	0	57%	48%
ICT Practitioners	41,300	5%	5%	9%	1%	14%	35%	9%	-20%	38%	72%	68%	70%	824	86	70%	48%
Performing Arts	39,450	3%	2%	5%	3%	13%	18%	10%	-23%	47%	71%	62%	72%	941	3	62%	37%
Engineering	32,750	4%	3%	4%	4%	17%	30%	8%	-13%	56%	77%	63%	73%	943	58	30%	49%
Transportation Operations and Maintenance	31,650	5%	5%	9%	3%	14%	35%	1%	-2%	52%	63%	68%	70%	926	139	27%	48%
Child Development and Well Being	30,900	4%	3%	6%	4%	8%	25%	-1%	-22%	68%	79%	61%	76%	938	50	34%	35%
Media and Communication	29,000	5%	5%	9%	1%	14%	35%	8%	-17%	42%	77%	68%	70%	842	5	61%	48%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Preparation for Work	28,600							-3%	-4%	39%	44%			892	82	13%	
Hospitality and Catering	26,750	2%	4%	4%	3%	15%	29%	-1%	15%	68%	78%	61%	62%	933	105	49%	57%
Public Services	26,550	1%	3%	3%	4%	12%	23%	6%	-18%	63%	76%	65%	77%	826	6	77%	42%
Languages, Literature and Culture of the British Isles	26,050	1%	4%	4%	6%	5%	16%	-1%	68%	47%	91%	66%	76%	507	140	0%	18%
Animal Care and Veterinary Science	21,200	4%	3%	6%	4%	8%	25%	6%	-16%	57%	73%	61%	76%	880	336	74%	35%
Science	20,750							20%	-24%	41%	83%			814		62%	
Travel and Tourism	16,750	2%	4%	4%	3%	15%	29%	2%	-9%	61%	78%	61%	62%	850	219	69%	57%
Accounting and Finance	11,350	5%	3%	4%	2%	4%	16%	4%	2%	65%	82%	62%	71%	882	1	36%	53%
Administration	10,700	3%	2%	7%	3%	15%	18%	-1%	-30%	57%	70%	59%	67%	936	158	48%	48%
Mathematics and Statistics	10,100	5%	3%	4%	2%	4%	16%	-4%	30%	41%	80%	62%	71%	875	25	10%	53%
ICT for Users	9,250	5%	5%	9%	1%	14%	35%	1%	-8%	49%	64%	68%	70%	827	125	56%	48%
Agriculture	8,250	3%	3%	5%	1%	9%	36%	0%	38%	48%	58%	76%	75%	900	238	49%	42%
Theology and Religious Studies	7,350	1%	4%	4%	6%	5%	16%	-2%	-12%	40%	87%	66%	76%			100%	18%
Law and Legal Services	5,800	1%	3%	3%	4%	12%	23%	13%	-5%	42%	81%	65%	77%	594		13%	42%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Horticulture and Forestry	3,850	3%	3%	5%	1%	9%	36%	-5%	-2%	46%	52%	76%	75%	943	207	74%	42%
Retailing and Wholesaling	2,950	5%	4%	5%	2%	12%	24%	-9%	-21%	36%	45%	62%	68%	838	264	57%	60%
Manufacturing Technologies	2,050	4%	3%	4%	4%	17%	30%	10%	-17%	63%	72%	63%	73%	887	33	1%	49%
Environmental Conservation	1,450	3%	3%	5%	3%	9%	36%	-8%	276%	54%	70%	76%	75%	375	172	78%	42%
Direct Learning Support	1,350	1%	4%	4%	6%	5%	16%	13%	21%	93%	98%	66%	76%	595	537	59%	18%
Sociology and Social Policy	1,050	3%	2%	5%	3%	13%	18%	19%	180%	38%	83%	62%	72%	601		14%	37%
Other Languages, Literature and Culture	900	3%	2%	5%	3%	13%	18%	5%	-14%	22%	75%	62%	72%	928	117	38%	37%
Philosophy	450							5%	-29%	23%	85%					100%	
Warehousing and Distribution	350	5%	5%	9%	3%	14%	35%	81%	148%	60%	70%	68%	70%	736	353	42%	48%
Publishing and Information Services	100	5%	5%	9%	1%	14%	35%	93%	15%			68%	70%	587		29%	48%
Marketing and Sales	100	3%	2%	7%	3%	15%	18%	41%	7%	100%	100%	59%	67%	696		0%	48%
Medicine and Dentistry	100	4%	3%	6%	4%	8%	25%	-15%	-48%			61%	76%	698		34%	35%
Teaching and Lecturing	100	1%	4%	4%	6%	5%	16%	-13%	-2%	40%	80%	66%	76%	739	211	23%	18%

Table 4: Individual indicators for young general VQs (responsive/innovative)

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Foundations for Learning and Life	396,850									4%	13%
Sport, Leisure and Recreation	72,700	5%	7%	15%	12%	21%	12%	1.0	0.0	1%	27%
Health and Social Care	66,200	7%	6%	13%	13%	18%	9%	4.5	0.1	3%	39%
Building and Construction	59,500	11%	1%	12%	20%	36%	21%	11.4	0.1	8%	90%
Crafts, Creative Arts and Design	51,450	5%	7%	15%	12%	21%	12%	1.0	0.0	2%	39%
Service Enterprises	43,800	6%	16%	13%	13%	31%	10%	22.7	0.6	0%	16%
Business Management	42,350	5%	4%	20%	21%	27%	14%	15.6	0.3	2%	33%
ICT Practitioners	41,300	7%	3%	21%	24%	26%	11%	4.7	0.1	6%	33%
Performing Arts	39,450	5%	7%	15%	12%	21%	12%	1.0	0.0	7%	27%
Engineering	32,750	8%	2%	15%	22%	35%	24%	20.4	0.4	2%	41%
Transportation Operations and Maintenance	31,650	7%	3%	21%	24%	38%	22%	22.7	0.6	0%	36%
Child Development and Well Being	30,900	7%	6%	13%	13%	18%	9%	4.5	0.1	0%	59%
Media and Communication	29,000	7%	3%	21%	24%	26%	11%	4.7	0.1	5%	38%
Preparation for Work	28,600									25%	86%
Hospitality and Catering	26,750	2%	2%	9%	12%	30%	8%	6.6	0.2	2%	51%
Public Services	26,550	3%	10%	15%	13%	9%	6%	12.0	0.1	1%	24%
Languages, Literature and Culture of the British Isles	26,050	6%	16%	13%	13%	19%	8%	15.6	0.3	100%	100%
Animal Care and Veterinary Science	21,200	7%	6%	13%	13%	18%	9%	15.6	0.3	8%	18%
Science	20,750							15.6	0.3	4%	27%

Travel and Tourism	16,750	2%	2%	9%	12%	30%	8%	9.8	0.2	1%	33%

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Accounting and Finance	11,350	5%	2%	23%	18%	21%	12%	11.4	0.3	0%	55%
Administration	10,700	5%	4%	20%	21%	27%	14%	9.8	0.2	15%	35%
Mathematics and Statistics	10,100	5%	2%	23%	18%	21%	12%	11.4	0.3	20%	89%
ICT for Users	9,250	7%	3%	21%	24%	26%	11%	4.7	0.1	3%	43%
Agriculture	8,250	8%	3%	14%	17%	34%	10%	7.4		9%	35%
Theology and Religious Studies	7,350	6%	16%	13%	13%	19%	8%	15.6	0.3	0%	0%
Law and Legal Services	5,800	3%	10%	15%	13%	9%	6%	15.6	0.3	1%	2%
Horticulture and Forestry	3,850	8%	3%	14%	17%	34%	10%	7.4		35%	37%
Retailing and Wholesaling	2,950	2%	1%	12%	17%	31%	10%	22.7	0.6	12%	23%
Manufacturing Technologies	2,050	8%	2%	15%	22%	35%	24%	20.4	0.4	4%	53%
Environmental Conservation	1,450	8%	3%	14%	17%	21%	13%	89.3	1.7	26%	26%
Direct Learning Support	1,350	6%	16%	13%	13%	19%	8%	15.6	0.3	1%	7%
Sociology and Social Policy	1,050	5%	7%	15%	12%	21%	12%	15.6	0.3	86%	86%
Other Languages, Literature and Culture	900	5%	7%	15%	12%	21%	12%	15.6	0.3	12%	60%
Philosophy	450									0%	0%
Warehousing and Distribution	350	7%	3%	21%	24%	27%	14%	22.7	0.6	26%	54%
Publishing and Information Services	100	7%	3%	21%	24%	26%	11%	4.7	0.1	100%	100%
Marketing and Sales	100	5%	4%	20%	21%	27%	14%	15.6	0.3	100%	100%
Medicine and Dentistry	100	7%	6%	13%	13%	18%	9%	4.5	0.1	61%	66%
Teaching and Lecturing	100	6%	16%	13%	13%	19%	8%	15.6	0.3	55%	85%

Table 5: Individual indicators for apprenticeships (rigorous/recognisable)

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Foundations for Learning and Life	1,524,300							-4%	16%					654	696	1%	
Health and Social Care	336,150	4%	3%	6%	4%	8%	25%	-4%	86%		91%	61%	76%	681	683	0%	35%
Administration	238,850	3%	2%	7%	3%	15%	18%	-1%	64%		90%	59%	67%	866	636	63%	48%
Engineering	168,100	4%	3%	4%	4%	17%	30%	-9%	-19%		86%	63%	73%	963	117	19%	49%
Business Management	127,500	3%	2%	7%	3%	15%	18%	-8%	48%		91%	59%	67%	891	505	50%	48%
Hospitality and Catering	125,850	2%	4%	4%	3%	15%	29%	-8%	32%		87%	61%	62%	942	519	46%	57%
Building and Construction	105,600	9%	6%	13%	2%	13%	34%	-7%	23%		72%	63%	67%	948	165	28%	42%
Transportation Operations and Maintenance	73,100	5%	5%	9%	3%	14%	35%	-4%	26%		88%	68%	70%	910	227	13%	48%
Retailing and Wholesaling	61,250	5%	4%	5%	2%	12%	24%	-24%	58%		92%	62%	68%	796	484	64%	60%
Service Enterprises	59,450	1%	4%	4%	2%	5%	16%	0%	20%		77%	66%	76%	743	415	68%	18%
Sport, Leisure and Recreation	52,700	3%	2%	5%	3%	13%	18%	15%	86%		84%	62%	72%	936	375	54%	37%
Child Development and Well Being	50,650	4%	3%	6%	4%	8%	25%	-9%	26%		86%	61%	76%	676	623	77%	35%
ICT Practitioners	45,150	5%	5%	9%	1%	14%	35%	-15%	55%		89%	68%	70%	816	62	39%	48%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Warehousing and Distribution	30,900	5%	5%	9%	3%	14%	35%	-19%	98%		90%	68%	70%	790	497	51%	48%
Accounting and Finance	26,750	5%	3%	4%	2%	4%	16%	-13%	12%		95%	62%	71%	781	171	37%	53%
Public Services	26,550	1%	3%	3%	4%	12%	23%	-36%	42%		89%	65%	77%	735	206	34%	42%
Manufacturing Technologies	23,450	4%	3%	4%	4%	17%	30%	-2%	19%		88%	63%	73%	938	154	13%	49%
Marketing and Sales	17,750	3%	2%	7%	3%	15%	18%	-43%	37%		90%	59%	67%	845	449	2%	48%
Direct Learning Support	12,500	1%	4%	4%	6%	5%	16%	10%	35%		92%	66%	76%	450	736	33%	18%
Preparation for Work	10,900							-4%	-56%					916	110	0%	
Animal Care and Veterinary Science	10,000	4%	3%	6%	4%	8%	25%	-15%	10%		82%	61%	76%	896	214	20%	35%
ICT for Users	7,200	5%	5%	9%	1%	14%	35%	-14%	75%		89%	68%	70%	533	411	50%	48%
Horticulture and Forestry	6,100	3%	3%	5%	1%	9%	36%	-17%	25%		83%	76%	75%	309	446	46%	42%
Medicine and Dentistry	3,600	4%	3%	6%	4%	8%	25%	-86%	-69%			61%	76%	1		100%	35%
Agriculture	3,550	3%	3%	5%	1%	9%	36%	-1%	51%		82%	76%	75%	526	360	42%	42%
Media and Communication	3,150	5%	5%	9%	1%	14%	35%	-8%	35%		76%	68%	70%	759	46	12%	48%
Crafts, Creative Arts and Design	2,750	3%	2%	5%	3%	13%	18%	1%	31%			62%	72%	934	320	15%	37%
Environmental Conservation	2,500	3%	3%	5%	3%	9%	36%	-28%	237%			76%	75%	773	172	7%	42%

Subject	Learners	% Disagree: VQs improve business performance	% Disagree: VQs improve ability to do jobs	% Disagree: VQs improve productivity	% Training did not improve skills	% VQs not as rigorous as other qualifications	% College leavers poorly prepared for work	Change in success rates 2010/11-2014/15	Change in VQ duration 2010/11-2014/15	% Sustained employ-mint	% Sustained learning or employ-mint	% Disagree: VQs lead to better pay	% Disagree: VQs lead to promotion or improved job status	Fragmentation of qualifications	Fragmentation of AOs per qualification	% Established qualifications	% Relevant VQs not significant in candidates
Nursing and Subjects Allied to Medicine	2,400	4%	3%	6%	4%	8%	25%	11%	9%		90%	61%	76%	1		0%	35%
Travel and Tourism	2,000	2%	4%	4%	3%	15%	29%	3%	-1%		91%	61%	62%	580	242	87%	57%
Teaching and Lecturing	1,450	1%	4%	4%	6%	5%	16%		477%		92%	66%	76%	513	558	0%	18%
Science	1,000							-6%	27%					794		58%	
Law and Legal Services	600	1%	3%	3%	4%	12%	23%	-30%	2%			65%	77%	720		0%	42%
Publishing and Information Services	100	5%	5%	9%	1%	14%	35%	62%	-72%			68%	70%	409	62	21%	48%
Languages, Literature and Culture of the British Isles	50	1%	4%	4%	6%	5%	16%	-75%	3%			66%	76%	419		0%	18%

Table 6: Individual indicators for apprenticeships (responsive/innovative)

Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Foundations for Learning and Life	1,524,300									2%	5%
Health and Social Care	336,150	7%	6%	13%	13%	18%	9%	4.5	0.1	10%	15%
Administration	238,850	5%	4%	20%	21%	27%	14%	9.8	0.2	7%	36%
Engineering	168,100	8%	2%	15%	22%	35%	24%	20.4	0.4	1%	36%
Business Management	127,500	5%	4%	20%	21%	27%	14%	15.6	0.3	13%	50%
Hospitality and Catering	125,850	2%	2%	9%	12%	30%	8%	6.6	0.2	14%	17%
Building and Construction	105,600	11%	1%	12%	20%	36%	21%	11.4	0.1	10%	50%
Transportation Operations and Maintenance	73,100	7%	3%	21%	24%	38%	22%	22.7	0.6	3%	12%
Retailing and Wholesaling	61,250	2%	1%	12%	17%	31%	10%	22.7	0.6	16%	22%
Service Enterprises	59,450	6%	16%	13%	13%	31%	10%	22.7	0.6	6%	19%
Sport, Leisure and Recreation	52,700	5%	7%	15%	12%	21%	12%	1.0	0.0	2%	28%
Child Development and Well Being	50,650	7%	6%	13%	13%	18%	9%	4.5	0.1	1%	21%
ICT Practitioners	45,150	7%	3%	21%	24%	26%	11%	4.7	0.1	1%	11%
Warehousing and Distribution	30,900	7%	3%	21%	24%	27%	14%	22.7	0.6	17%	38%
Accounting and Finance	26,750	5%	2%	23%	18%	21%	12%	11.4	0.3	9%	40%
Public Services	26,550	3%	10%	15%	13%	9%	6%	12.0	0.1	7%	64%
Manufacturing Technologies	23,450	8%	2%	15%	22%	35%	24%	20.4	0.4	6%	38%

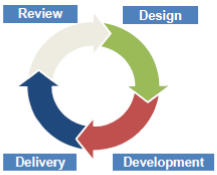
Subject	Learners	% Disagree: VQs can be adapted to business needs	% Helped design or set coursework	% VQs not relevant or available	% VQs do not cover all skills needed	% Vacancies due to skills shortage	% Vacancies due to lack of skilled applicants or qualifications	Jobs to new qualifications ratio	Vacancies to new qualifications ratio	% Learners on new AO	% Learners on new qualification
Marketing and Sales	17,750	5%	4%	20%	21%	27%	14%	15.6	0.3	18%	35%
Direct Learning Support	12,500	6%	16%	13%	13%	19%	8%	15.6	0.3	2%	2%
Preparation for Work	10,900									12%	13%
Animal Care and Veterinary Science	10,000	7%	6%	13%	13%	18%	9%	15.6	0.3	29%	37%
ICT for Users	7,200	7%	3%	21%	24%	26%	11%	4.7	0.1	29%	29%
Horticulture and Forestry	6,100	8%	3%	14%	17%	34%	10%	7.4		49%	54%
Medicine and Dentistry	3,600	7%	6%	13%	13%	18%	9%	4.5	0.1	0%	0%
Agriculture	3,550	8%	3%	14%	17%	34%	10%	7.4		32%	40%
Media and Communication	3,150	7%	3%	21%	24%	26%	11%	4.7	0.1	3%	23%
Crafts, Creative Arts and Design	2,750	5%	7%	15%	12%	21%	12%	1.0	0.0	22%	40%
Environmental Conservation	2,500	8%	3%	14%	17%	21%	13%	89.3	1.7	0%	13%
Nursing and Subjects Allied to Medicine	2,400	7%	6%	13%	13%	18%	9%	4.5	0.1	0%	0%
Travel and Tourism	2,000	2%	2%	9%	12%	30%	8%	9.8	0.2	0%	0%
Teaching and Lecturing	1,450	6%	16%	13%	13%	19%	8%	15.6	0.3	39%	71%
Science	1,000							15.6	0.3	17%	32%
Law and Legal Services	600	3%	10%	15%	13%	9%	6%	15.6	0.3	100%	100%
Publishing and Information Services	100	7%	3%	21%	24%	26%	11%	4.7	0.1	79%	79%
Languages, Literature and Culture of the British Isles	50	6%	16%	13%	13%	19%	8%	15.6	0.3	100%	100%

Regulators

Figure 3: Ofqual regulatory requirements

All regulated qualifications have to comply with the General Conditions of Recognition

- A qualification has to secure the requirements of:
  - **Validity:** Assessment outcomes meet their intended uses
  - **Reliability:** Assessment process generate consistent outcomes
  - **Comparability:** Generate assessment outcomes that are comparable in standards between assessments within a qualification, between similar qualifications with other AOs and over time.
  - **Manageability:** Feasibility of carrying out particular assessment processes.
  - **Minimising Bias:** An assessment does not produce unreasonably adverse outcomes for Learners who share a common attribute.
- The General Conditions of Recognition sets standards for each stage in the qualification life cycle and compliance checks may be performed at any stage:



- **Design**: how an AO decides on the objectives of its qualification
- **Development**: specifying assessment materials and who will mark it
- **Delivery**: implementing assessments and evaluating performance and set standards
- **Review**: evaluating the qualifications and makes changes and improvements

- Ofqual does not have the resources to conduct audits or checks on all AOs and qualifications.
- A risk and intelligence-based approach is adopted to make judgements about which AO and qualifications have particular risks.

Ofqual's Risk Framework seeks to identify risks to the provision of valid qualifications

- Ofqual's risk framework helps to identify risks that arise not only from an AO's internal structures and processes but also external factors such as competition among AOs or changes in funding.

Key elements of Ofqual's Risk Framework are:

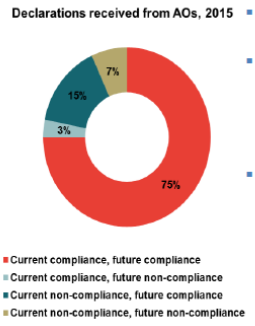
- **A qualification portfolio analysis**: An assessment of potential impact of on students and others if something goes wrong. This takes into account volumes and type of qualification each AO delivers. The higher the potential impact, the more active Ofqual regulates.
- **Risk assessments:** Assessments made against defined risk indictors and are used to target compliance activity
- **Risk intelligence**: Evaluate and interpret information received from a range of sources (government agencies, whistle blowers, and AOs)
- **Market and systemic risk analysis**: Undertake market and other analyis to help assess current or emerging risks.
- **Audit, research and investigation outcomes:** Outcomes of compliance activities are used to inform future risk assessments.

Figure 4: Annual statement of compliance and Ofqual audit

Annual Statement of Compliance (SoC)

All recognised Awarding Organisations must make an annual statement of compliance with the Conditions. This is a web-based submission and the information is compared against other information and intelligence Ofqual holds on the AO. Regulatory action is taken in instances of non-compliance.

In 2015, Ofqual received annual statements from 160 AOs with only one instance of failure to provide a SoC. Regulatory action is taken against this AO.



- The chart on the left shows the breakdown of SoC declarations in 2015.
- The most frequent declarations of non-compliance were about an AO's resource availability and arrangements (7 cases) and about issuing certificates and replacement certificates (7 cases).
- 23 AOs made declarations which Ofqual did not consider to be accurate. Majority of these cases was due to inconsistencies with information already held by Ofqual. In other cases, Ofqual did not deem some AOs to be non-compliant despite their declarations.

- Actions taken against non-compliant AOs include requesting more information on non-compliance or adding the AO to a forthcoming audit.

Audit

Ofqual has developed a rolling programme of audit work that assess levels of assurance about the compliance of the AOs and qualifications that they regulate.

- **Timing**: Recognised AOs may be audited at any time, with frequency of audits for each AO being proportionate to the risk level it may pose to the system. AOs are given reasonable notice once they are selected for audit.
- **Programme:** Emphasis is placed in checking the resources and arrangements AOs have in place. Audit can be performed on any stage in the qualification's life cycle (design, development, delivery or review). After the audit work is completed, findings are shared with the respective AO. Good practices are shared in the audit report and if deemed necessary, could be incorporated in the Conditions.
- **2015 Audit:** 22 AOs were selected for an audit on the design and development of qualifications. For each AO, three qualifications were reviewed as a means to test the resources and arrangements the AOs had in place. This includes the qualification with the most certifications, the one with the fewest certifications and the one most recently submitted to the Register of Regulated Qualifications.
  - 20 AOs demonstrated compliance while 2 AOs demonstrated compliance but with poor practices and hence at risk of future non-compliance.
  - Poor practices found include a lack of internal review and controls for qualifications developed in partnerships and a lack of guidance for Centres delegated responsibility for designing their own assessments.

- Other compliance tools used are
  - **Technical evaluation –** using appropriate research and evaluation methods to assess how well AO apply their processes
  - **Investigations –** where there is information that leads to a suspicion of non-compliance

Evidence from other countries

In order to be able to highlight some of the differences between the vocational qualifications market in England and other countries, we have carried out analysis of 5 other case study countries.

These case studies have been selected on the basis of the following criteria:

- ensuring a global spread of case studies;
- building on and not repeating the case studies explored by the Sainsbury Review (Sainsbury et al, 2016);
- the extent to which adequate information was available;
- the extent to which there are characteristics of those countries that are shared with England (such as average incomes; population size or level of public funding); and
- we have focused on developed countries only.

The case studies explored are Denmark; Singapore, the Netherlands, Canada and Finland. These are described below.

Denmark

Basic education is from 6 to 16 years old and then students have a choice of a general education track or vocational track:

- General education track: there are two types of vocational gymnasium leading to either the higher commercial examination; or the higher technical examination. These are both vocationally oriented. Students do not get vocational qualifications but instead, learners are prepared specifically for higher vocational education (business school and engineering school). They do not provide formal certification for the labour market, but recent data shows that 79% students were in employment (EVA 2016).
- Vocational track: Only about 20% of 17 year olds choose the vocational track and a further 20% join the track after attempting the General education track or employment first. For this track, students have to secure an apprenticeship agreement. The first year is undertaken in college where students learn general subjects such as English, Maths, Danish and Science and some technical subject matter. Learners are paid a wage while they are on their apprenticeship. The Main Programme (apprenticeship) is substantially different to apprenticeships in the UK in terms of breadth of curriculum, robustness of assessment, and consistency of national certification.

The institutional structure for vocational education differs markedly from England and has the following features:

- The Ministry for Children, Education and Gender Equality Administers the legislative framework for the VET system and supervises vocational colleges. The Ministry approves new programmes and provides funding. The Ministry is advised

on vocational education matters by the National Advisory Council for IVET which comprises 30 representatives from social partners, and representatives of teachers and students.

- 50 Trade Committees (one for each occupation or group of occupations) set the standards for the VET curricula, assessments and outcomes. These Committees comprise 10-14 members drawn from specific industries with equal numbers of representatives from employers and trade unions. They review students' progress to employment alongside labour market demand, and also propose new programmes to the Ministry.
- Local Education & Training Committees, appointed by Trade Committees, carry out a range of functions including: approving local companies to take students on work placements; ensuring sufficient supply of placements and adapting the curriculum to suit local employers; and they act as mediators between apprentices and companies.
- 117 Colleges offer 111 vocationally orientated education programmes. At the end of their programmes, learners take an exam with theory and practical components. The practical test is assessed by external examiners from trade committees and employers.

Singapore

In Singapore, at the age of 12 years old, students take a standardized exam (PSLE) that determines which education "stream" they are to follow. Around 65% of the students of each cohort go through a vocational education route through Polytechnics or Institutes of Technical Education (ITEs). ITEs and Polytechnics maintain a close connection with industry partners to define the desired outcomes for each of their programmes. Employment rates for fresh graduates from vocational colleges (Institute of Technical Education and Polytechnics) are 83% and 89% respectively .

Many professional bodies also play a role in the co-development of programmes, of which there are 331 qualifications and programmes offered by public vocational institutions which have received approval from the Ministry of Education.

A recent innovation in Singapore is the SkillsFuture Credit Scheme . This aims to promote increased vocational training and life-long learning. Under the SkillsFuture Credit Scheme, the Singapore government will pay out learning credits ($500) for all Singaporeans aged >25 years old to contribute towards course fees for work-skills related courses supported by public agencies.

As part of the scheme, every Singaporean will have an Individual Learning Portfolio. This is an online, one-stop education, training and career guidance portal to plan their education, training, and career path. Career planning classes are built into the curriculum at all primary and secondary education level. Students on ITE, polytechnic and university courses are expected to have greater accessibility to overseas markets as a result of the scheme. Structured programmes and enhanced internships have been designed to better support career exploration and workplace learning. For mid-career Singaporeans aged

40 years and above, they will receive a minimum of 90% subsidy on all Ministry of Education funded courses.

The Netherlands

The Dutch VET system draws active participation from employers into curriculum planning. The key players in the system include the following:

- The Ministry of Education, Culture and Science (OCW): this administers central government funding on VET. It is responsible for strategic policy and oversight for VET, except for Agriculture which comes under the remit of the Ministry of Economic Affairs, Agriculture and Innovation. The Ministry is supported by the Foundation for Cooperation on VET and the Labour Market (SBB). The SBB represents all social partners (employers, employees and training providers) and provides a unified voice on VET policy to advise the OCW.
- Knowledge Centres (KBB): Knowledge Centres are the primary vehicles for employer and employee representation in the Dutch VET system. There are 17 Knowledge Centres and each covers a particular sector. They are mandated by the state to carry out a range of functions: to develop and maintain qualifications; to recruit and accredit participating employers; to coordinate and promote sector training (e.g. recruiting new vocational education providers); and to conduct labour market intelligence studies.
- Regional Education and Training Centres (ROCs): there are 42 ROCs throughout the Netherlands. A typical ROC will run over 150 VET courses and have around 10,000 VET students and 2,500 adult education students. There are currently 612 recognised qualifications for over 5,000 professions. The ROCs deliver sector VET that has been designed by Knowledge Centres. The Association for Vocational and Adult Education (MBO Raad) represents the collective interest of the ROCs.

Canada

Ministers of Education in each of the 13 provinces and territories are responsible for the provision of VET. They are typically responsible for:

- Planning, implementing and evaluating VET with consultation from the industry; and
- Curriculum development, assessment, funding formulas and technological innovation.

Nationally, 131 public and 25 private recognised institutions offer post-secondary VET programmes. An additional 35 private institutions are authorised to offer specific post-secondary VET programmes. The quality of post-secondary education is primarily the responsibility of individual institutions, but each institution is subject to their respective provincial or territorial quality assurance mechanisms.

Unlike the dual system of Germany and Netherlands, students generally complete a comprehensive 12 years of general education. Vocational courses are usually offered as optional programmes in the last two years of general secondary education.

In Québec, young people can participate in vocational education at an earlier age than other provinces, from the age of 14. There is also a distinctive layer in the VET system formed by the Collèges d'Enseignement Général et Professionnel (CEGEPs) which provide two tracks for students who have achieved their secondary school diploma leading to the Diploma of College Studies: i) a pre-university, two-year programme; and ii) a three-year technical programme for specialized occupations. The latter is seen as a programme for technicians and technologists. A third programme, the Attestation of College Studies, is available for students who have not obtained their secondary school diploma but who have been in the labour market for eight months. Skills Training Certificates are also available for people who want to train or upskill through short courses.

In contrast, schools in Alberta offer Career and Technology Studies (CTS), organised as modules lasting 25 hours covering learning outcomes at three levels: introductory, intermediate and advanced. They can be taken by students (alongside the core curriculum) wanting an introduction to a particular occupational field or as preparation for a more specialized programme. Alberta piloted a Dual Credit Strategy to further improve the high school graduation rate and participation in post-secondary programmes. Apprenticeships in Canada are regulated by the provinces and territories and typically involve industry in determining the standards for training and certification. In Alberta, there is a form of high school apprenticeship called the Registered Apprenticeship Program (RAP) as well as a Green Certificate programme for the agricultural sector, internships and other forms of work experience – all of which count towards the high school diploma. The RAP covers traditional trade areas (construction, hairdressing, catering, etc). Students are required to register as apprentices and follow the required certification standards for their trade (some trades are regulated and some are not). In Ontario, students are not required to register as apprentices to participate in the high school apprenticeship programme.

Across Canada, given apprenticeships are under provincial jurisdiction, the Red Seal programme of certification for trades is intended to provide national standards for apprenticeship to enable individuals to work across the country.

Finland

Between the age of 7 and 16 years old, students go through a comprehensive basic education. Upon which, they are able to choose between continuing a general upper secondary education (50.8% choose this option) or the vocational training track (40.3%). Within vocational training, students are able to further choose between school-based VET or apprenticeship training. Both types of training can eventually qualify the students to obtain the upper secondary vocational qualification or competence-based qualifications.

Under the school-based option, upper secondary vocational qualifications were reformed in 2014 such that the scope of vocational qualifications is now 180 credits (3 years) with 135 credits of vocational studies, 35 credits of core subjects and 10 credits of free-choice modules. There is also a minimum of 6 months on-the-job learning.

For competence-based qualifications, programmes are customised for each individual based on the National Qualification Requirements.

Comparative observations

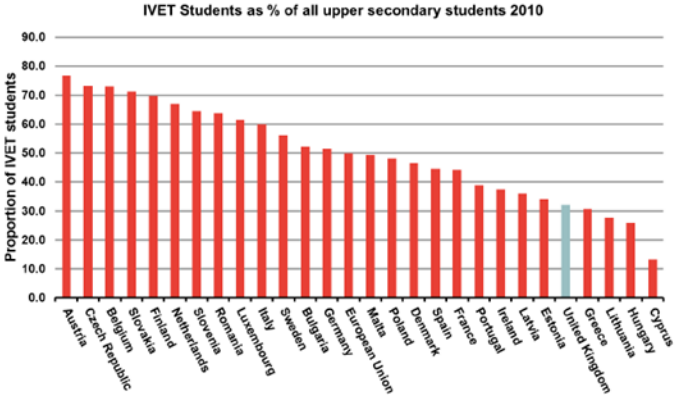
In Denmark, Finland and the Netherlands, IVET (including apprenticeships) sit firmly within upper secondary education. In Singapore, IVET is being developed and will be anchored in upper secondary education with clear progression through to polytechnics and the labour market. In Canada, which has an upper secondary system, although some IVET takes place in schools, apprenticeships are regarded as a post-upper secondary programme. The UK stands out in not having a fully developed concept of upper secondary education, and instead using a looser notion of post-compulsory education and training/FE.

General education forms a substantial part of IVET in Denmark, Finland and the Netherlands (and in several other European countries) – unlike the UK – this means that students on full-time programmes are studying for approximately 35 hours per week (twice the rate of the UK where ‘full-time’ = 15 to16 hours).

Comparative statistics

UK has one of the lowest proportion of IVET students among upper secondary students in 2010.

Figure 5: IVET students as percentage of all upper secondary students (2010)



Key points

- In 2010, about half (49.9%) of all upper secondary students were enrolled in vocational programmes .
- Austria had the highest share of upper secondary students undertaking vocational programmes at 76.8%.
- Belgium, the Czech Republic and Slovakia recorded more than 70% of upper secondary students in the VET stream.
- Cyprus (13.2%), Hungary (25.8%) and Lithuania (25.8%) had the lowest shares (all below 30% in 2010).
- On average, in the EU, the share of IVET students dropped slightly between 2006 and 2010 (down 1.8 percentage points). The biggest percentage point decrease was in the UK where it fell by 9.6 percentage points.

Source: CEDEFOP & Eurostat

**Caveat: This statistics tracks the overall number of students in IVET programmes as a proportion of all upper secondary students. Vocational track programmes varies in length among countries. Some countries with students transiting in and out of jobs while on the vocational programme have long training years. This may explain the high percentages of IVET students in countries with dual track systems such as Germany and Netherlands.*

UK has relatively low public expenditure as a share of GDP on vocational education but relatively high spending overall on education.

Figure 6: Expenditure levels on education

Key points

- Finland has the highest proportion of public expenditure on vocational education as a % of GDP, at 1.3%.
- Belgium follows closely behind at 1.18%.
- It is no surprise that these two countries have some of the highest enrolment rate in vocational education in the previous slide. 70% of Finnish secondary students and 73% of Belgian secondary students are enrolled in vocational education.
- UK spends 0.46% of its GDP on vocational education, lower than Netherlands (0.81%) and Germany (0.58%).
- In terms of annual expenditure on public and private educational institutions per student, UK has relatively high spending at 7914 PPS.
- Cyprus has the highest expenditure per student at 9519 PPS.

Source: Eurostat

**PPS is the technical term used by Eurostat for the common currency in which national accounts aggregates are expressed when adjusted for price level differences using PPPs. Thus, PPPs can be interpreted as the exchange rate of the PPS against the euro*

UK IVET graduates have employment rates lower than the EU average in 2009.

Figure 7: Employment rate for 20-34 year old IVET graduates (2009)

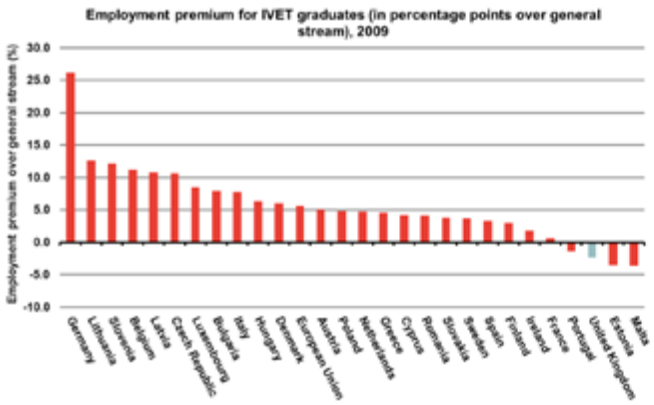
Key points

- In 2009, the EU average employment rate for IVET graduates between the ages of 20-34 is 79.1%.
- The employment rate for UK IVET graduates (20-34 years old) is 78.2% in 2009
- The three countries with the highest employment rates for their IVET graduates are Netherlands (90.6%), Luxembourg (89.8%) and Malta (89.7%).
- Germany, with a population of 80.6m, has a higher employment rate at 83.9% than that of the UK with a population of 65m.

Source: CEDEFOP & Eurostat

UK IVET graduates have lower employment rates than their counterparts going through the general stream in 2009.

Figure 8: Employment premium for IVET graduates (in percentage points over general stream), 2009



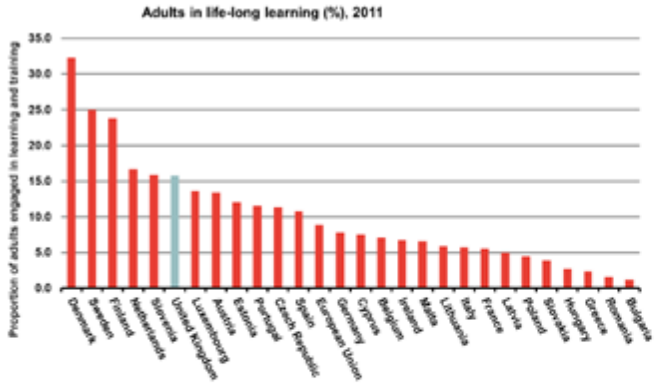
Key points

- In 2009, UK, Portugal, Estonia and Malta are the only four countries whereby their IVET graduates have lower employment rates compared to the general stream graduates at the same level.
- Germany has exceptionally high employment premiums for its IVET graduates. An IVET graduate has a 26.2% higher chance of landing a job than a general stream graduate.
- Students on the general track usually prepares for the university and hence have little vocational skills.

Source: CEDEFOP & Eurostat

UK scores relatively high on life-long learning indicator.

Figure 9: Adults in lifelong learning (%), 2011



Key points

- The lifelong learning indicator is defined as the percentage of adult population aged 25-64 years old participating in education and training over the four weeks prior to the EU labour force survey.
- In 2011, UK, Slovenia, Netherlands, Finland, Sweden and Denmark reported participation rates above 15%.

Source: CEDEFOP , Eurostat and EU Labour force survey

Technical analysis of drivers of market outcomes

Chapter 7 ‘Assessment of market weaknesses’ draws on regression analysis exploring the correlation between a number of market characteristics and the RRRI indicators of a subject area.

We consider the following market characteristics:

- Concentration – we use an HHI measure based on market shares either at the level of subject area, or at the level of individual qualification title, giving a ‘head-to-head’ measure of competition.
- Training provider type – share of learning delivered by i) colleges ii) private training providers.
- Switching rate - the share of learning aims accounted for by providers who switched awarding organisation for that qualification title between 2010-11 and 2013-14.

We measure the relationship between the RRRI indicators and each case of these the market characteristics variables in turn. This is done at the level of subject area, e.g. to see whether a subject with greater switching sees better outcomes. We use univariate regression analysis to estimate the following equation:

$$Outcome_i = a + b^* Characteristic_i + u_i \qquad \text{for subject area i.}$$

The coefficient b measures the effect of a unit increase in market characteristic variable on the outcome of interest. So if the characteristic increases by X, the outcome variable will change by bX. The corresponding ‘p-value’ shows the statistical significance of the relationship, with the smaller p-value the more statistically significant the relationship. A p-value of 0.05, for example indicates there is a 5% probability that null hypothesis of no relationship is in fact true. Variables with a p-value less than 0.10, i.e. those that are statistically significant at the 10% level, have been highlighted yellow.

The correlations are shown in the following table. The rows show the effects of different market characteristics and the columns show the impacts on different market outcomes.[1]

[1] For example, from the upper let cell we see that a standard deviation increase in ‘head-to-head’ concentration increases the RI indicator by 0.18 * 0.43 = 0.077 points.

We show results for RR and RI indicators, with RR further divided into Rigour and Recognisable components. This is because we wish to drill further into these separate components, in case they respond in different ways to the market characteristics.

Table 7: Market characteristics variable

Market characteristic variable	Mean	Standard deviation	Impact on outcomes (positive coefficient indicates negative effect on outcome variable):							
			RI indicator		RR indicator		Rigour		Recognisable	
			Coefficient	P-value	Coefficient	value	Coefficient	value	Coefficient	value
Concentration HHI – 'head-to-head' measure	0.57	0.18	0.43	0.019	0.731	0.000	0.87	0.000	-0.273	0.053
Concentration HHI – subject area level	0.25	0.07	0.18	0.695	-0.433	0.109	-0.486	0.145	-0.654	0.056
College % of provision	0.7	0.12	0.451	0.105	-0.614	0.000	-0.741	0.000	-0.365	0.086
Private % of provision	0.17	0.12	-0.016	0.956	0.584	0.000	0.7067	0.000	0.090	0.682
Switching rate	0.23	0.15	-0.551	0.012	-0.608	0.023	-0.744	0.024	0.246	0.156

Source: Frontier analysis of ILR, ESS and EP data

We also show the mean and standard deviation of the market characteristic variables to give a sense of what magnitude of change might be expected. For example, the coefficient of the RI indicator on concentration HHI is 0.18 and the standard deviation of that variable is 0.18, so a (typical) standard deviation increase in concentration HHI would be associated with the RI indicator being 0.18 * 0.43 = 0.077 higher. Recall that the indicator scores range from zero to one.

The analysis is restricted to the adult vocational qualification segment of the market. Many of the RRRI indicators would be less meaningful in relation to the apprenticeship or young general VQ markets. In particular, survey data are available for these segments. In addition, employment outcomes will be less pronounced for apprentices, as they are already in employment. As there is scope for smaller outlying subject areas to disproportionately affect the analysis, the sample is weighted by size of subject area.

It is important to note some limitations of this approach:

- Due to variation in employment and labour market characteristics across sectors, subject areas may exhibit different levels of performance. This variation could be due to many factors, and is not necessarily due to the role of qualifications. It is difficult to compare subjects on a like-for-like basis, as we cannot separate sectoral characteristics from qualification impacts.
- Some of the survey data the underlying the RRRI indicators are at a very aggregated level. As it is not always straightforward to map these to individual subjects, these outcomes will be measured imprecisely. Although this should not raise particular issues in the context of identifying which subject areas have poorer outcomes, it may be more problematic in the context of exploring correlations between performance and market conditions.

Reference: DFE- RR702

ISBN: 978-1-78105-797-1

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

Any enquiries regarding this publication should be sent to us at:
www.education.gov.uk/contactus

This document is available for download at www.gov.uk/government/publications