



THE INSTITUTE OF THE MOTOR INDUSTRY

Sector Priorities Fund Pilot 2 – Vehicle Diagnostic Systems



Gwelliannau Busnes | Business Improvement

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Executive Summary

Institute of Motor Industry (IMI) is the professional association for the individuals working in the retail motor industry and the authoritative voice of the sector. IMI is transforming the automotive industry by setting, upholding and prompting professional standards – driving skills acquisition, establishing clearer career paths and boosting public confidence.

In 2011 the IMI conducted a programme of in depth granular research building on the Sector Skills Assessment carried out in 2010. This research was designed to fully articulate the needs of each of the 12 sub-sectors under the IMI footprint. Many of these reports highlighted vehicle diagnostics as being an area where up skilling is required as a result of advancing technology and changes to the modern vehicle.

Over the funded period the main project objectives were:

To develop the provision of effective QAA (Quality Assured Award) provision for vehicle technicians in diagnostics systems and commence delivery by April 2013

To upskill at least 100 participants by December 2014

To engage at least 35 employers on the project by December 2014

IMI ensured there was a good geographical split over the whole of Wales. Ultimately, three providers were selected, Coleg Llandrillo Rhyl, covering the North, Bosch were recruited as a training provider and covered the mid and East Wales, finally Coleg Sir Gâr managed the learners located in the West of Wales.

The headline objective to upskill at least 100 participants by December 2014 was achieved and the target of 35 employers was well surpassed, reaching 54 by the end of 2013 and 98 by the end of 2014.

A total of 98 employers were engaged through the IMI training, and by December 2014, 129 learners were upskilled as a result. The evaluation team conducted interviews with 33 of these employers and gathered verbal feedback from 39 learners employed by these garages.

Of the majority who have successfully applied the skills in the workplace many wished the courses offered even more. One garage owner said “The course was very good; I wish the course had been longer so he, (the learner), could have picked up even more skills”.

Learners able to apply new skills also meant that they can work much more independently. A garage owner quoted “He enjoyed the course, the learner can work much more independently now”. This freed up the time of the owner as he didn’t have to give as much guidance to his employee.

40% of employers view the course as having some impact on profitability. For some the course had a large impact on profitability, for example a garage owner said “We have had

BOSCH diagnostics kit here for some years and only just really learnt how to use it thanks to this course!”

Businesses felt that the course had a positive impact on learners and the working methods they applied back in the day to day working environment.

The learners were drawn from a wide range of ethnic backgrounds, which broadly reflects the ethnic mix in Wales. All ages were represented and the research showed all got a significant level of learning from the course.

The research also showed that age does not appear to be a barrier to the desire to learn new skills. Respondents noted positive experiences across all age groups.

Recommendation 1: There is clear demand for training across Wales in vehicle diagnostics. It is recommended that the IMI works with the providers to ‘mainstream’ the courses developed during the pilot. If further funding can be secured to make the courses accessible to the SME organisations in the sector we are confident the demand is there.

Recommendation 2: The IMI should work with the providers and industry to design further courses in vehicle diagnostics that cover a broader range of topics and vehicles. The evaluation identified the demand for further up-skilling of the workforce. These courses should be affordable and transferable.

Recommendation 3: There were no female learners upskilled by this project, it is a recommendation that the number of females working in the sector in Wales is investigated with a view to attracting female learners onto any subsequent IMI training courses. Indicative statistics for the sector show less than 5% of motor technicians employed in Wales are female.

Recommendation 4: 11% of the learners expressed a preference for Welsh Language delivery. The IMI made it a requirement that Providers could issue course materials/assessment in the Welsh language; however the courses were all delivered in English. It should be noted that the providers were able to deliver in Welsh but the cohorts chose to have English medium delivery. The IMI and the providers should review their policy for promoting Welsh language delivery, for example by targeting all Welsh language cohorts.

Recommendation 5: A consistent approach to course development, delivery and evaluation would be beneficial as it would support the IMI objectives for future accreditation of the diagnostic courses.

Recommendation 6: The IMI should consider how to extend the reach of the training programmes to ensure all potential learners, regardless of their geographical locations are catered for. This could include the use of web based learning or other similar distance learning methods.

Recommendation 7: There is an opportunity for the IMI to develop a link between the course learning and potential capital investment plans to enable the business owners to see the advantages of the purchase of sophisticated diagnostic equipment. It is recommended that any investment grants or advantageous loans schemes be integrated with the learning to maximise the impact of the skills transfer on the economy.

1.0 Introduction

1.1 Introduction to IMI

Institute of Motor Industry (IMI) is the professional association for the individuals working in the retail motor industry and the authoritative voice of the sector. IMI is transforming the automotive industry by setting, upholding and prompting professional standards – driving skills acquisition, establishing clearer career paths and boosting public confidence.

Established in 1920, the IMI filled a specific need for individuals desiring recognition for their accomplishments and the recognition they received led to steady growth in membership. Those needs still exist today therefore membership and professional recognition remains the core of the organisation's existence.

The mission statement of IMI is making IMI qualifications, accreditations and membership the Gold Standard for professionals working in the automotive retail, related and adjacent sectors. Recognised as the "common currency" by which professionals are evaluated and necessary attainments for those wishing to enhance their status, recognition, skills & employability, both in the UK and abroad, creating a compelling case for automotive careers.

The IMI have a vision to be the UK's most respected and admired industry body. Internationally recognised as authoritative, valued and supported across the sector and beyond.

IMI products and services provide solutions for individuals and businesses within the retail automotive sector. Through every step of development, from first encounters with the industry, to management and leadership decisions taken by business owners, IMI has developed a range of solutions to support the sector, to develop a skilled workforce and raise standards within the industry.

The IMI recognises a number of challenges are currently facing the automotive sector

- Attracting and retaining talented individuals
- Ensuring current and future skills needs are met
- Ensuring sector has skilled managers and leaders to drive change
- Ensuring businesses understand the benefits of up-skilling staff
- Changing public perception of the sector and increasing consumer confidence

The IMI are meeting these challenges in a number of different ways but have a focus on upskilling the industry through qualification, accreditation and professional development.

1.2 Evidence of need from sector employers

In 2011 the IMI conducted a programme of in depth granular research building on the Sector Skills Assessment carried out in 2010. This research was designed to fully articulate the needs of each of the 12 sub-sectors under the IMI footprint. Many of these reports highlighted vehicle diagnostics as being an area where upskilling is required as a result of advancing technology and changes to the modern vehicle.

Vehicle diagnostics employed within the light retail and automotive repair sectors are increasing becoming more IT based as more complex fault diagnosis becomes a necessity. There is a significant danger of technology quite literally overtaking the smaller independent motor vehicle repair outlets, particularly in rural areas and this would ultimately have a significant negative effect throughout Wales but particularly in North and Mid-Wales where the skills need to remain unaddressed.

The IMI's SPFP Pilot included considerable evaluation both independent and also within the IMI project team itself. It was documented and discussed with Welsh Government (WG) at the time that vehicle diagnostics was an area commonly mentioned by employers throughout Wales as a necessary field of future training. Coleg Llandrillo, now Group Llandrillo Menai, who participated as one of two providers, carried out their own study in 2012 which identified demand amongst all vehicle repair outlets with whom they work/have worked, for diagnostics training.

IMI ran a successful Sector Priority Fund Pilot (SPFP) project in the area of Climate Control and as a result proposed a very similar project in line with the advancement of technology. This project is targeted to deliver bespoke courses, which are IMI awards Quality Assured, in the area of Vehicle Diagnostics Systems.¹

1.3 Objectives of Workforce Development project in Vehicle Diagnostics

To improve the capability of SME motor vehicle repair outlets to deal effectively with modern vehicle diagnostics systems and continue to provide vital services to Welsh communities and particularly those in rural areas.

1.4 Objectives of the Evaluation

Oakbank Ltd were selected by the IMI to undertake the final evaluation of the Workforce Development as a result of the vehicle Diagnostics SPFP2 project. The intention of this evaluation is to provide the funding body with qualitative and quantitative information, regarding the impact of the Vehicle Diagnostics project, and whether the programme has achieved its stated objectives. This evaluation will also provide evidence that may be of assistance in future bids for funding.

¹ IMI SPFP Project Proposal Form May 2012 - Vehicle Diagnostics.doc

This evaluation will focus on and draw conclusions against the following objectives

- Analysis of project performance against its targets
- Analysis of pre-collected participant and employer feedback
- Feedback on impact of delivery from 30% of participating businesses
- Interviews with the three Learning Providers providing views on project impact and management.

This evaluation will also provide information on the lessons that can be learnt with regard to any future development of applications for funding for similar activity.

Why Monitor and Evaluate?

- To establish baseline data
- To ensure sound project implementation
- To learn
- Demonstrate/plan/improve utilisation of resources
- Provide evidence to Welsh European Funding Office (WEFO) of project activity
- Develop provision
- Inform policy development
- Accountability of use of public funding

The aim of the project evaluation is as follows:

- Assess whether projects achieve their objectives
- How efficiently were outputs and results achieved
- Wider consideration of outcomes and impacts
- What would have happened without the intervention

1.5 Evaluation Methodology

1. An inception meeting was conducted with Richard Hick, the project manager of the vehicle diagnostics pilot, to receive relevant information, documentation, and contact details of stakeholders, and to confirm the evaluation scope and timescales.
2. Review of relevant documentation, including the project proposal and other management information.
3. Selection of a balanced sample of each stakeholder group, but noting the overall small sample size, the evaluation will target responses from all relevant stakeholder representatives. The stakeholder groups are as follows: Coleg Llandrillo Rhyll, Coleg Sir Gâr, Bosch and the participating organisations' business owners and learners.

4. Preparation of appropriate questionnaire material for interviews with each stakeholder group, seeking to elicit quantitative and qualitative data. Triangulation of data will be sought wherever possible and relevant.
5. Undertake face-to-face, Skype or telephone interviews.
6. Collation of respondent data.
7. Preparation of draft report.
8. Submission of draft report to IMI, and any amendments and/or additional data.
9. Submission of final evaluation report.

2.0 The IMI Project – a description

2.1 Aims of IMI

This proposed project capitalises on market intelligence obtained during and following the IMI's previous SPFP Pilot and seeks to deliver innovative training programmes which will raise and widen skill levels within the sector in line with advancing technologies. Directly, this will also serve to further the offer available from Colleges and Training Providers to the automotive sector. During the process of initial set up with Providers who have been procured the relationships between Providers and the IMI will become closer as considerable dialogue will be needed in the early stages in order to ensure that bespoke modules of delivery in Vehicle Diagnostics are a robust response to employer demand.

The key objective of this project is to upskill at least 100 participants in delivering a total of 4500 guided learning hours in the subject of Vehicle Diagnostics throughout Wales.²

2.2 IMI project Objectives

Over the funded period the main project objectives are:

To develop the provision of effective QAA (Quality Assured Award) provision for vehicle technicians in diagnostics systems and commence delivery by April 2013

To upskill at least 100 participants by December 2014

To engage at least 35 employers on the project by December 2014

2.3 Target Beneficiaries

The primary beneficiaries are the learners. The aim of the project is to take mechanics from diverse but appropriate backgrounds and through a mixture of formal training and hands on

² IMI SPFP Project Proposal Form May 2012 - Vehicle Diagnostics.doc

practical experience, develop the individual giving them a skill set which will add value in their current business and also will make them highly desirable as future employees within the automotive vehicle repair sector.

It was a particular focus of the project to ensure that the vehicle diagnostic skills training was taken up learners in rural areas, so that the repair centres can continue to provide a vital service to more remote communities.

2.4 Project Location

IMI utilised an open tender process to recruit the colleges and training providers.³

It was the intention of the IMI to ensure there was a good geographical split over the whole of Wales. Ultimately, three providers were selected, Coleg Llandrillo Rhyll, covering the North, Bosch were recruited as a training provider and covered the mid and East Wales, finally Coleg Sir Gâr managed the learners located in the West of Wales.

2.5 Equal Opportunities

All organisations delivering training under the IMI project have Equal Opportunities Policies which are adhered to at all times.

The IMI applied targets to providers to engage female and ethnic minority participants although this will be realistic and in accordance with the local geographical demographics. Women are a clear under-represented group within motor vehicle repair. The employment of persons from ethnic origins within the sector tends to be equivalent to the local population demographics.

Marketing was monitored and approved to positively discriminate and promote female and ethnic minority employees in the sector.

The skills needs, to which this project responded, exist across all participants at present.

It was also noted at the outset that it would be a desirable criteria for engagement providers to have Welsh Language speaking tutors, especially where engaged in North and Mid-Wales. It will be required that assessment materials for vehicle diagnostics courses are available in the Welsh Language.

Equal Opportunities as a cross cutting theme is part of this evaluation of the project.

2.6 Environmental Sustainability

Vehicle diagnostics systems are, amongst other things, directly related to the tuning of vehicles and vehicle emissions. Therefore the end user output of this project has a direct positive impact upon the environment.

³ SPFP2 Project Tender Specification V1.1.doc

2.7 IMI Project Management

The IMI recruited Richard Hick on a part time basis to oversee the project and deal with all of the project administration. The same format was used on the IMI's SPFP pilot.

2.8 Delivery of Training

The project aimed to deliver bespoke courses which are IMI Awards Quality Assured, in the subject area of Vehicle Diagnostics Systems. The project aimed to provide 45 guided learning hours for each learner, each of the providers had a different approach to delivering the training.

Both Coleg Llandrillo Rhyl and Coleg Sir Gâr used an evening format to deliver their courses, using three hour classes each week over a 15 week period. This format was selected as the learners, were fitting in their training after their working day.

Bosch took an intensive training approach; they delivered the course over a period of six days of 7.5 hours each, split into two teaching days a week for three weeks.

2.9 Value for Money

| IMI Vehicle Diagnostics | |
|--------------------------------------|-------------|
| Total cost per participant (45 glh) | £1,350.00 |
| Employer contribution per learner | £450.00 |
| SPF Funding contribution per learner | £900.00 |
| No of funded learners | 129 |
| Employer contributions | £58,050.00 |
| SPFP Funding | £116,100.00 |
| Total project value | £174,150.00 |

Table 1 Value for Money

The cost of training skilled individuals is significant, but return on investment studies carried out by the IMI show that upskilling in the automotive sector delivers a conservative gross value added (GVA) of £4000 per person per annum.⁴ Based on this conservative estimate, the benefit the GVA for the project, based on 129 up skilled individuals is in the region of 0.5M per annum.

2.10 Management of Risks

IMI have produced a risk assessment⁴ which will be used for project management to log and monitor risks throughout the lifetime of the project.

The risk assessment indicates that there are risks involved in the project however these risks are only to a medium / low level. On the risk assessment there are also likelihood and impact levels associated to each risk.

The initial risk was a 'failure to engage sufficient employers'. This had a fairly low likelihood of occurring however the impact of occurring was high. IMI put assistance in place to support the learning providers to ensure effective and "joined up" marketing of the diagnostics training. Market Intelligence from Phase 1 project engagement was fully utilised to where previous participating providers are re-engaged. Some colleges were more successful than others in course recruitment with larger networks, however even though the colleges had varying numbers (Rhyl 41, Bosch 58 and Sir Gâr 30) the maximum number of participants were reached that could occupy the course with funding available.

Participant failure to achieve was another medium risk. IMI put in a number of controls in place in order to mitigate this risk. The IMI Awards QAA process ensures that assessment requirements are appropriate to target level and quickly standardised prior to certification. Furthermore the IMI project manager would regularly monitor and appraise delivery and records on a quarterly basis and monthly in initial cases where required in order to monitor

⁴ IMI SPS Project Proposal Form May 2012 – Vehicle Diagnostics.doc

that everyone are on track. Also participants had to complete a standardised initial assessment to ensure that the course is appropriate to the individual's needs and capabilities.

The final medium risk the IMI had was a failure in audit trail/evidence. To combat this there was a clear procedure manual developed and supplied to all providers. Furthermore the IMI project manager regularly monitored and appraised the audit trail.

There was also some risks with a low likelihood of occurring involved with the project, however if occurred their impact would have been significant. Firstly there were the confusion/difficulties around participant providers working to standardised assessment criteria. IMI awards QAA processes were tracked and monitored ensuring clear criteria are available prior to commencement of delivery. Another risk was a failure in project management, which if this had gone wrong the impact on the project would have been very significant. This was mitigated by the project manager being in turn monitored by IMI Finance and Project Management team on a quarterly basis with clear reporting requirements.

3.0 Evaluation Findings & Outcomes

3.1 Analysis of project performance against its targets

Objective 1 - To develop the provision of effective QAA (Quality Assured Award) provision for vehicle technicians in diagnostics systems and commence delivery by April 2013

The IMIM advised that the team chose not to map the course against National Qualification Framework; this allowed the providers some local flexibility to ensure that the course was tailored to meet industry needs.

The three selected providers held regular meetings to standardise and scope the course content, the QAA processes were followed throughout. In addition some of the providers invested in hardware to support the teaching. Coleg Sir Gâr invested in additional diagnostic equipment and a diesel common rail injection car

Objective 2 - To upskill at least 100 participants by December 2014

The headline objective to upskill at least 100 participants by December 2014 was achieved.

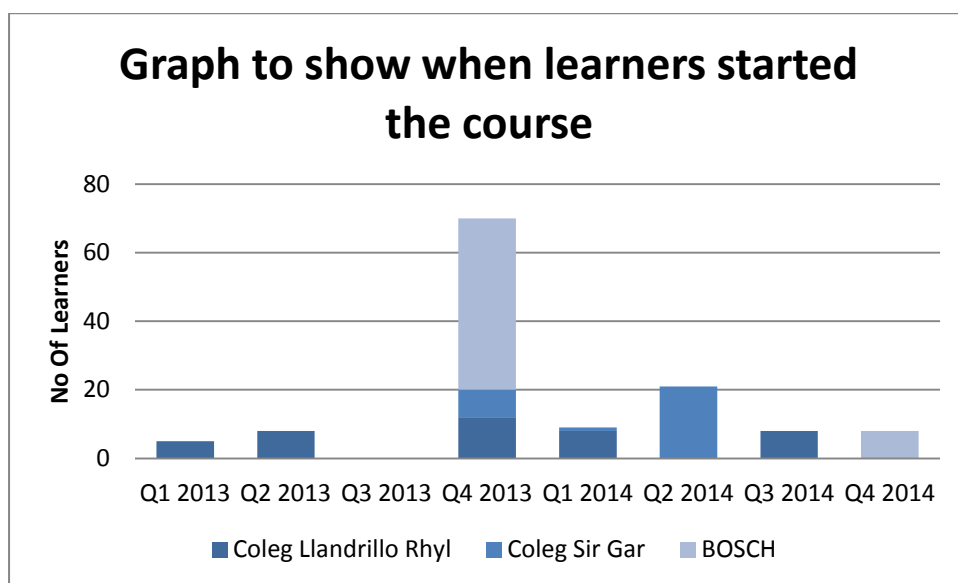


Figure 1 Dates learners started the course

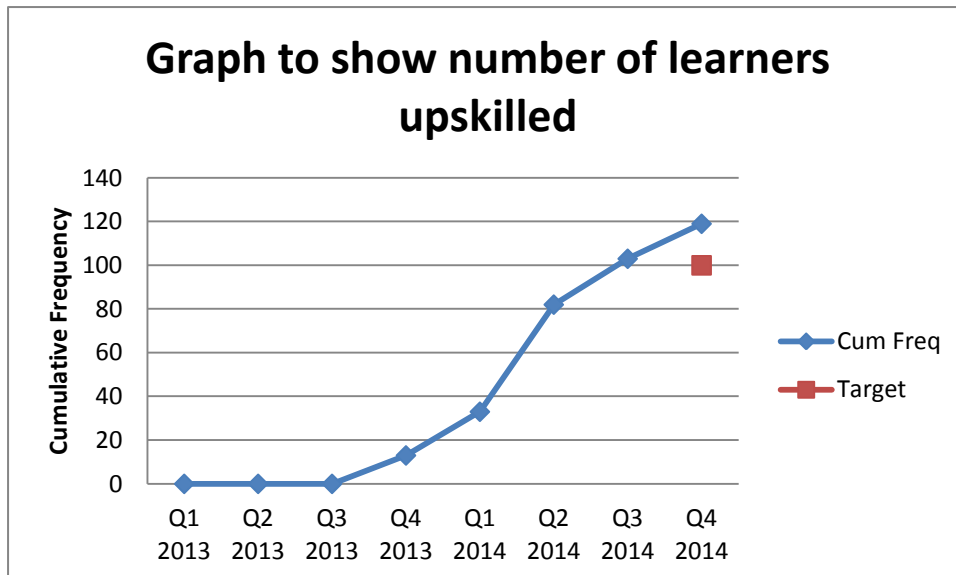


Figure 2 Number of learners upskilled

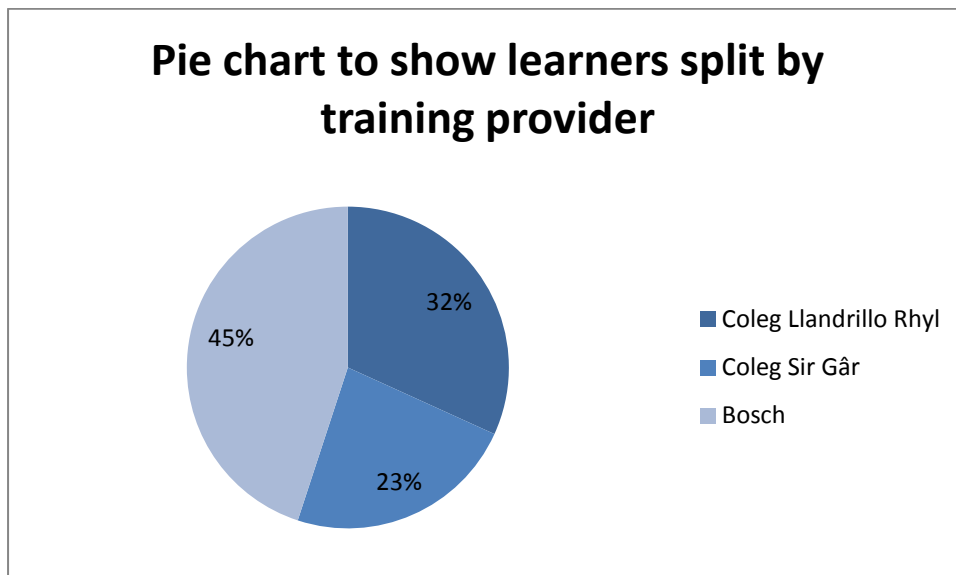


Figure 3 Learners split by training provider

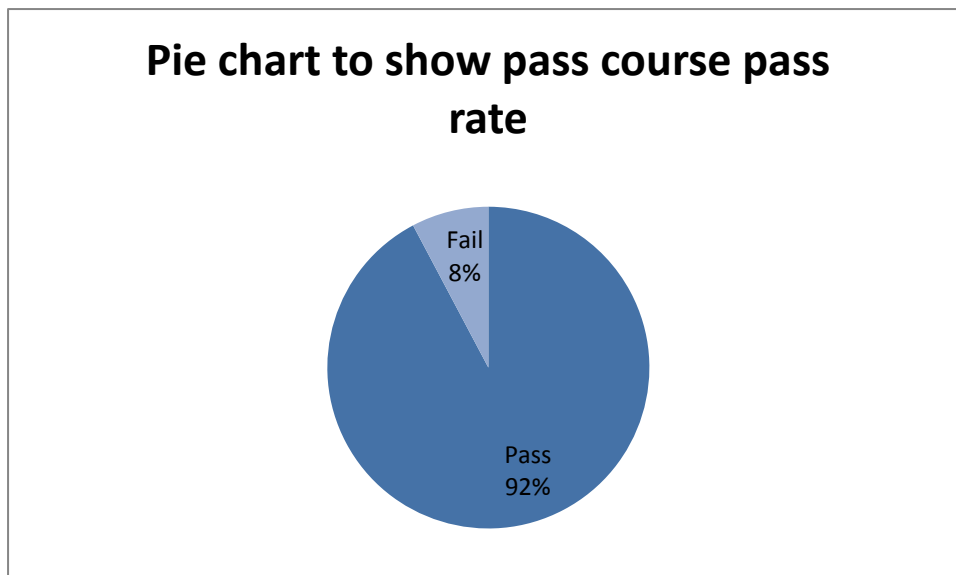


Figure 4 course pass rate

The above graphs demonstrate the success of the project in reaching its objective of upskilling at least 100 people by December 2014.

The cumulative frequency against the target clearly demonstrates how efficiently the project reached its target. This was done in December 2014 a quarter ahead of schedule. This is outlined in the first graph which shows when a large proportion of the learners started the course.

Bosch who had the largest amount of learners at 58 (as seen in graph 3) started in quarter 4 of 2013 and did the majority of the learning in one large chunk. Rhyl started the process as soon as possible because of their vast network base. However Coleg Sir Gâr was slow starters with delays in finding suitable teachers and ensuring the course was standardized. This was a reason why there was nearly double the amount of learners studying the course with BOSCH than Coleg Sir Gâr.

Across the 3 learning providers there were variances in learner numbers with Coleg Llandrillo Menai Rhyl with 41 learners, BOSCH with 58 and Coleg Sir Gâr with only 30.

Success levels varied across the 3 providers with not all 3 achieving 100% pass rates. Coleg Sir Gâr and Rhyl were successful in attaining 100% pass rates, however BOSCH weren't, taking the overall pass rate down to 92%. 10 of BOSCH's learners failed. However it should be noted that the reason that these learners failed the course was because of lack of payment rather than not having the capabilities to be able to complete the course.

Objective 3 - To engage at least 35 employers on the project by December 2014

The graph below shows that the engagement processes gained significant momentum from Q4 2013 onwards, and surpassed the target of 35 employers, reaching 54 by the end of 2013 and 98 by the end of 2014.

The training providers used a variety of techniques to engage businesses. In Rhyl, the main tutor has an extensive network of local garages to draw from. The tutor has previously worked in the sector and provided a number of training courses in the past, so most of the learners already had some experience of being trained at Rhyl. This provided a highly successful strategy, as the college were able to commence courses in quarter 1 2103.

Coleg Sir Gâr started their employer engagement processes by utilising their college database of apprentice training advisors and asked them to contact local industry. They also liaised with local motor factors and left course details in reception areas. Coleg Sir Gâr also made their level 3 past apprentices aware of the opportunity so that they continue to develop their skills. Coleg Sir Gâr started their first group of learners in quarter 4 2013.

Bosch used their distribution network of part suppliers and asked them to publicise the courses. The relationship the parts suppliers have with the local garages can be strong so this provided a good way to engage employers in the locality.

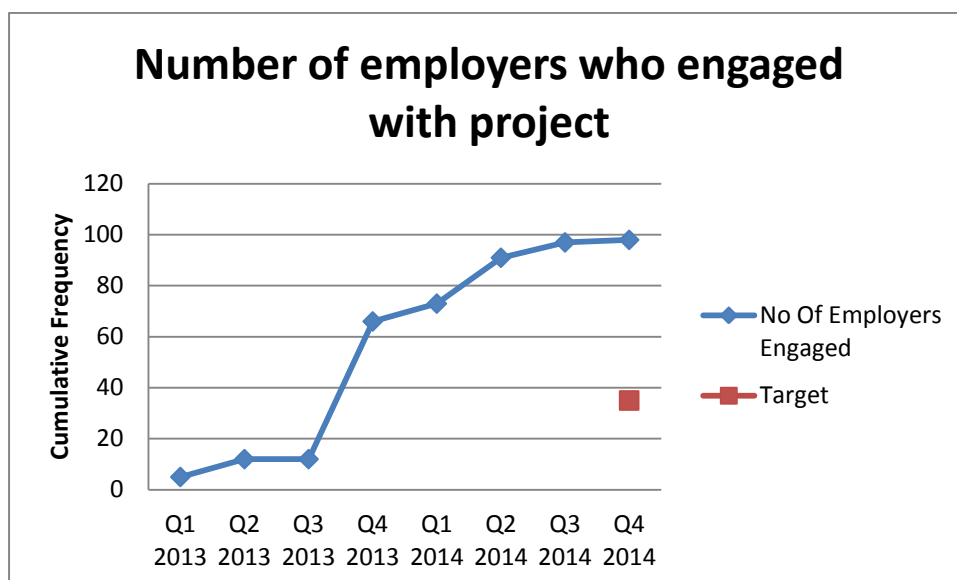


Figure 5 Number of employers who engaged with project

Analysis was conducted to show the size of the employing organisations that provided learners for the course.

As can be seen from the graph below, the majority of learners came from micro enterprises (employing fewer than 10 staff), a total of 106. 9 learners were from small enterprises (employing fewer than 50 staff) and 3 were from SME business. Based on this data, the employers engaged were all in the project target sector.

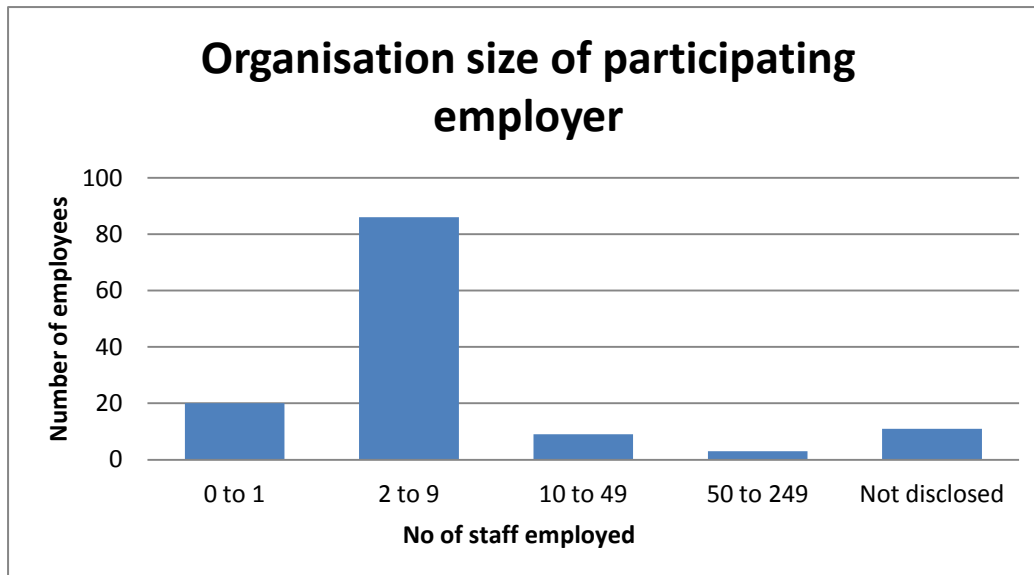


Figure 6 Organisation size of participating employer

A map was created to show the geographic split of engaged employers by training provider the results are shown below.



Figure 7 Geographic split of engaged employers

The map clearly shows that the three training providers engaged employers in their locality with little cross over. On exception was a garage located near Milford Haven who used Bosch as a trainer rather than Coleg Sir Gâr.

A heat map was created to understand the geographic split by unitary authority of engaged employers, again the results are shown below.

As can be seen from the map the majority of the 22 unitary authorities in Wales were included in the data, with four exceptions, Flintshire and Wrexham in the North, Powys in Mid Wales and Torfaen in the South.

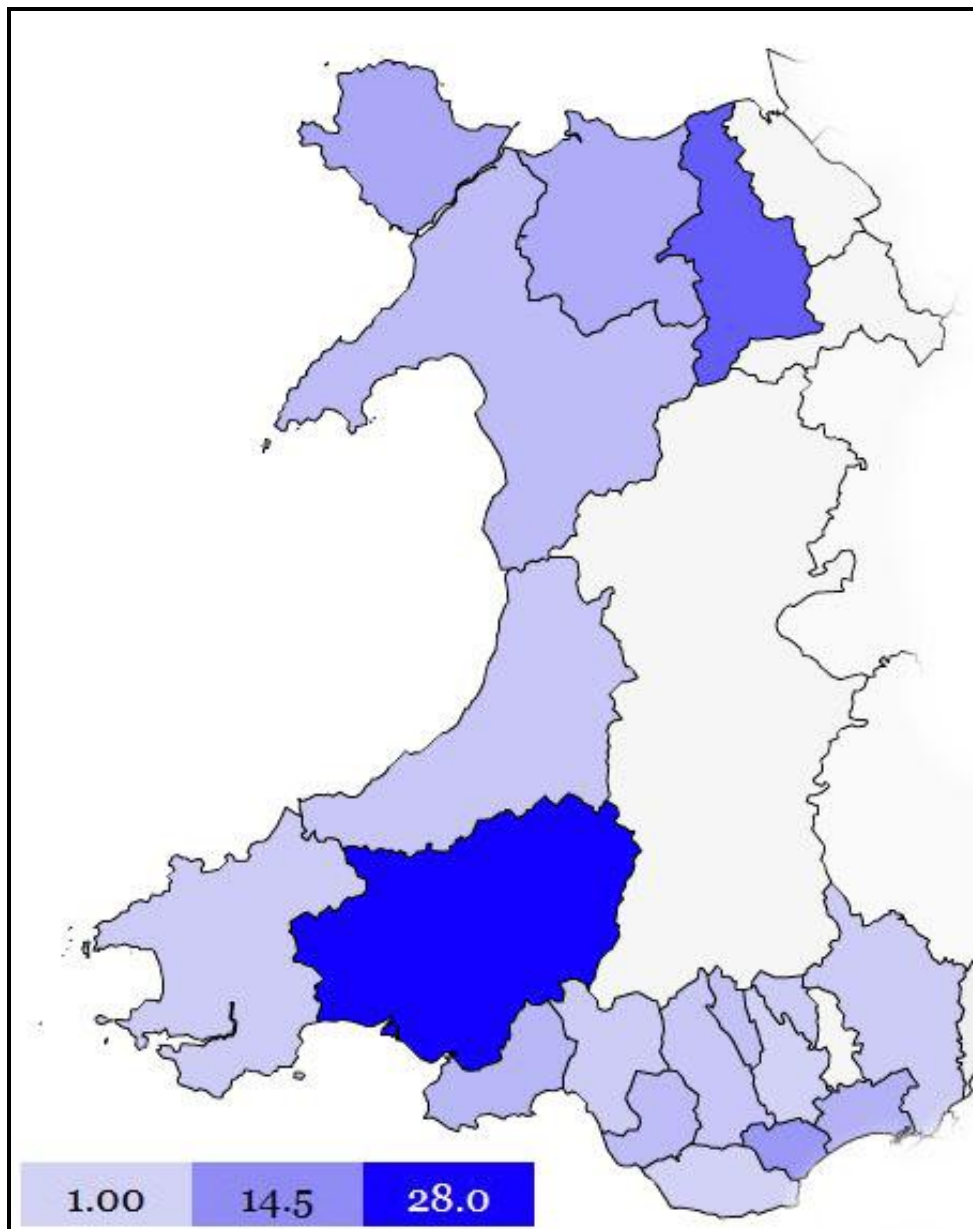


Figure 8 Geographic split by unitary authority of engaged employers

A table showing the data behind the heat map is show below, Carmarthenshire had the highest number of upskilled learners at 28, the vast majority trained by Coleg Sir Gâr. Denbighshire and Cardiff also had a significant number of upskilled learners trained by Coleg Llandrillo Rhyl and Bosch respectively.

| Unitary authority location of engaged employer | Number of upskilled learners |
|--|------------------------------|
| Carmarthenshire | 28 |
| Denbighshire | 19 |
| Cardiff | 12 |
| Isle of Anglesey | 9 |
| Conwy | 8 |
| Newport | 7 |
| Swansea | 6 |
| Bridgend | 5 |
| Gwynedd | 5 |
| Merthyr Tydfil | 4 |
| Rhondda Cynon Taff | 3 |
| Ceredigion | 3 |
| Blaenau Gwent | 2 |
| Monmouthshire | 2 |
| Pembrokeshire | 2 |
| Neath Port Talbot | 2 |
| Vale of Glamorgan | 1 |
| Caerphilly | 1 |
| Torfaen | 0 |
| Wrexham | 0 |
| Powys | 0 |
| Flintshire | 0 |

Table 2 Geographical spread of Learners

The spread of learners across Wales is good around the population centres of North and South Wales. The rural penetration appears to be less successful however. There were no training providers based in Mid Wales and this could account for some of the lack of participation in these regions. Clearly the travel time to a weekly three hour course would have prohibitive and even the intensive format offered by Bosch would have been difficult to combine with a length commute.

3.2 Analysis of pre-collected participant and employer feedback

Coleg Llandrillo Menai Rhyl college 23 feedback forms from 41 learners.

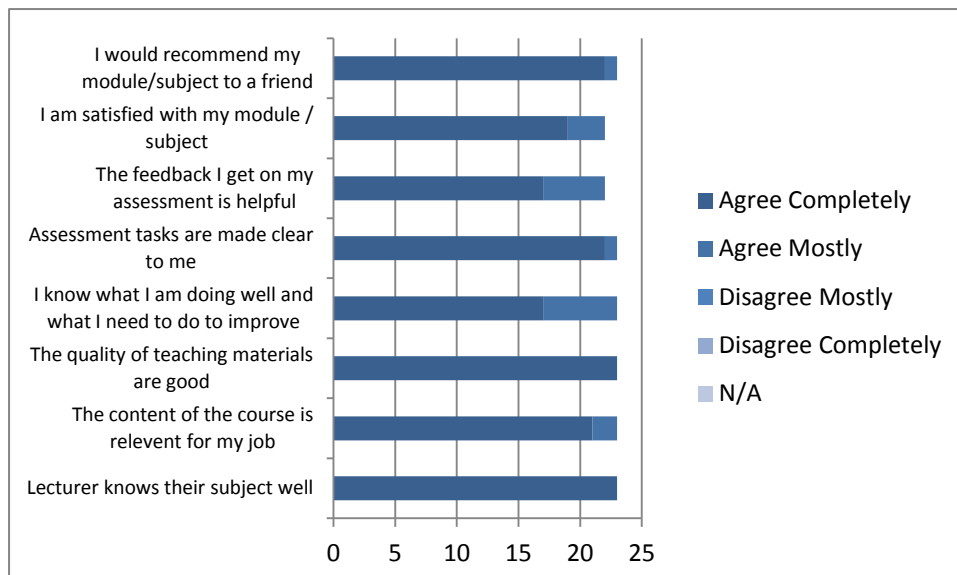


Figure 9 Summary of learner comments

This graph demonstrates that 100% of the participants who gave feedback thought the lecturer knew their subject well. This was also the case with the teaching materials, where 100% agreed completely that the qualities of teaching materials are good. Nearly 100% of participants would also agree completely about recommending the course to a friend. The only ones where not all participants are 100% agreeing completely is 'I know what I am doing well and what I need to do to improve' and 'The feedback I get on my own assessment is helpful'. However the low percentage of participants that would not agree completely with both statements would agree mostly with it. To conclude it can be said that although 23 out of 41 of the learners completed the feedback form which is more than half the learners, that the participants were very impressed with the standard of the course.

Bosch collected informal feedback from their learners as the course went along. The team at Bosch also interviewed the host employers, again on an informal basis, to understand the impact of their training course.

It is important to note that there was no formal requirement for feedback or evaluation from the providers, rather the three training providers used, in most cases, soft data to trim their course content and delivery style. The evaluation team have not had sight of any feedback forms from Coleg Sir Gâr so we assume a similar approach to Bosch was taken here.

3.4 Analysis of impact of delivery from host employers

Telephone interviews were conducted with a random selection of the employers involved, and included a selection taught by each training provider.

A total of 98 employers were engaged through the IMI training, and by December 2014, 119 learners were upskilled as a result. The evaluation team conducted interviews with 33 of these employers and gathered verbal feedback from 39 learners employed by these garages.

3.5 Analysis of potential skill gaps as highlighted by engaged employers

The telephone interview asked the employers if there were any other skill gaps or training needs which they had identified which the IMI could help them to bridge.

The majority of employers were keen to ask if more of their team members could be trained in the same diagnostics course. Where the employer was satisfied with the extent of the diagnostics training, the businesses tended to be very small with two or less staff.

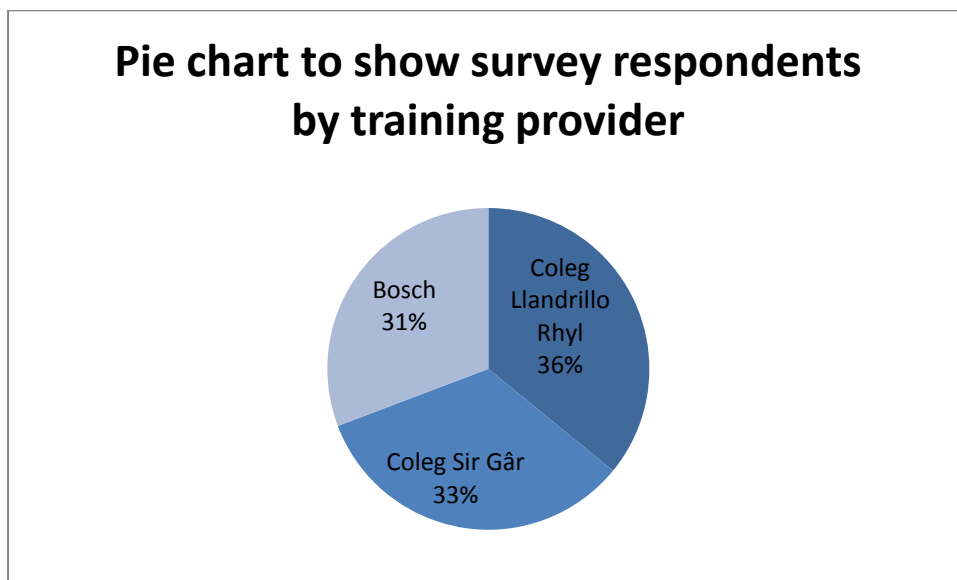


Figure 10 Pie chart to show survey respondents by training provider

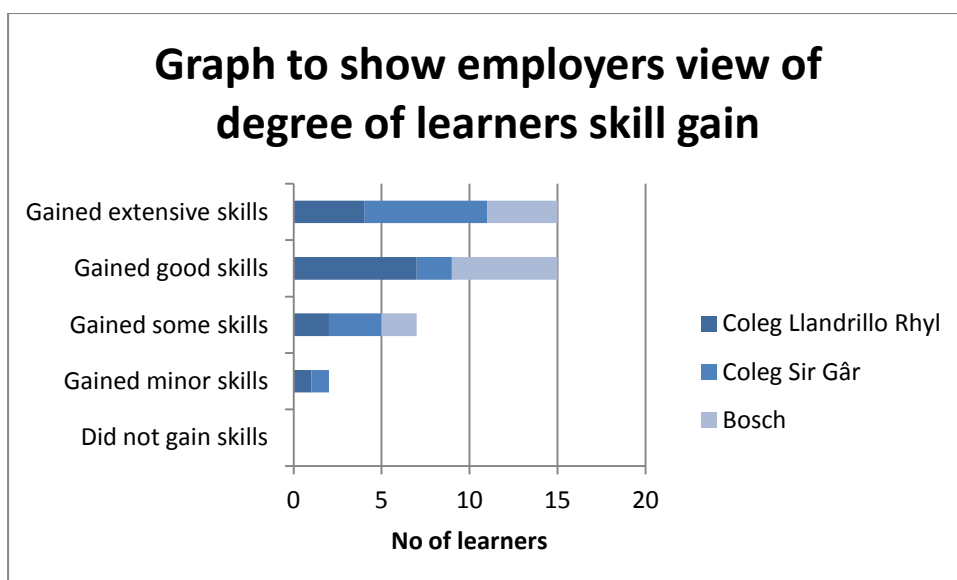


Figure 11 Graph to show employers view of degree of learners skill gain

The above graph shows the employer's views of degree of learners skills gained. As can be seen 77% of employers would say that the course has allowed for extensive or good skills to be gained. This is was the case over the 3 learning providers. The course completely changed how some garage owners went about fault findings, for examples one garage

owner said “This course reinvented the way I do my diagnostics, now use volt drop rather than probe testing 85% of the time”. Only 1 person from Coleg Sir Gâr and 1 person from Coleg Llandrillo Rhyll would say that only minor skills were gained as a result of the course.

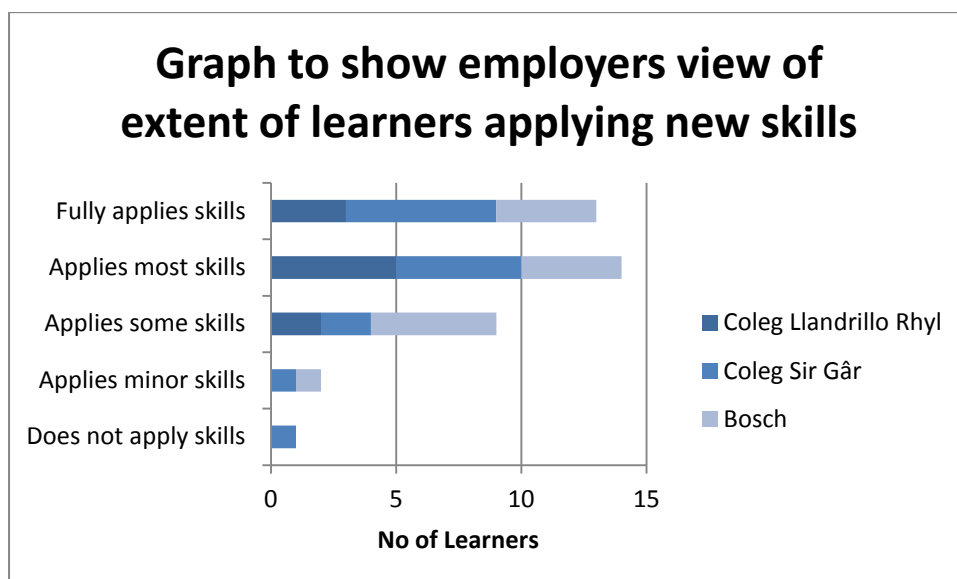


Figure 12 Graph to show employers view of extent of learners applying new skills

Application of new skills has been as been very high. Over 25 employers would say that the learnt skills have been applied fully or that the learner is applying most of the skills. Only 3 employers would say that there’s only minor skills application or hasn’t applied any skills.

The research uncovered that the employers sent some employees on the course ‘in case there would be a need for them to use the knowledge’, but admitted this wasn’t what they would be doing in the garage every day. Furthermore there was a significant amount of expensive equipment involved in the diagnostics process; some of the smaller garages said they would only be able to buy part of the equipment needed. Therefore this has limited garages capability to apply the new skills.

When comparing this graph to the previous graph it can be seen that the learners have been successful in learning new skills, but are not necessarily applying them all of the time. Of the majority who have successfully applied the skills in the workplace many wished the courses offered even more. One garage owner said “The course was very good; I wish the course had been longer so he, (the learner), could have picked up even more skills”.

Learners able to apply new skills also meant that they can work much more independently. A garage owner quoted “He enjoyed the course, the learner can work much more independently now”. This freed up the time of the owner as he didn’t have to give as much guidance to his employee.

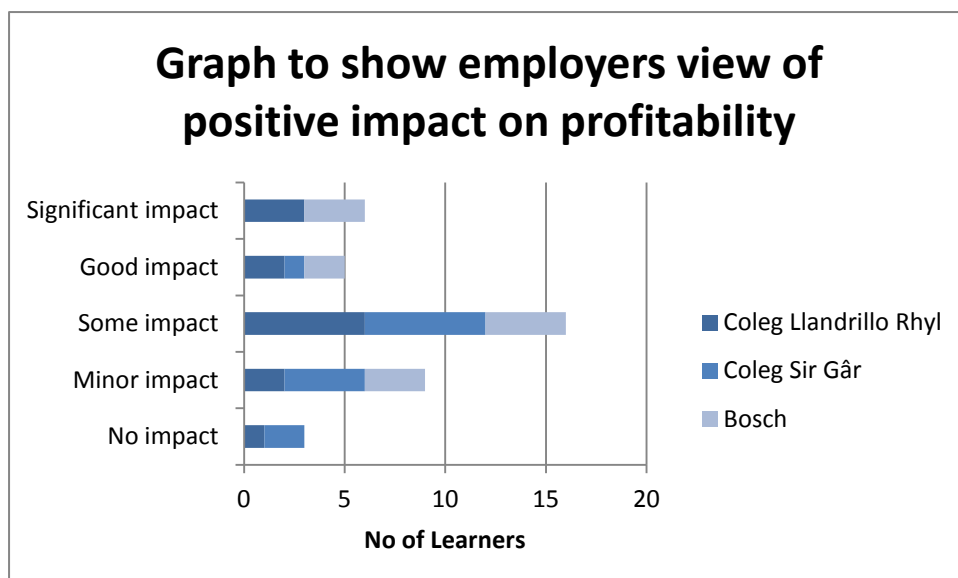


Figure 13 Graph to show employers view of positive impact on profitability

The above graph shows that 40% of employers view the course as having some impact on profitability. For some the course had a large impact on profitability, for example a garage owner said “We have had BOSCH diagnostics kit here for some years and only just really learnt how to use it thanks to this course!” There were 22.5% employers who commented that the course had minor impact on profitability. A reason for this is a large amount of garage owners weren’t able to measure accurately if there had been a direct increase in profitability as a result of completion of the course. Smaller garages with only a few employees were able to see large parallels between course completion and increase in profitability.

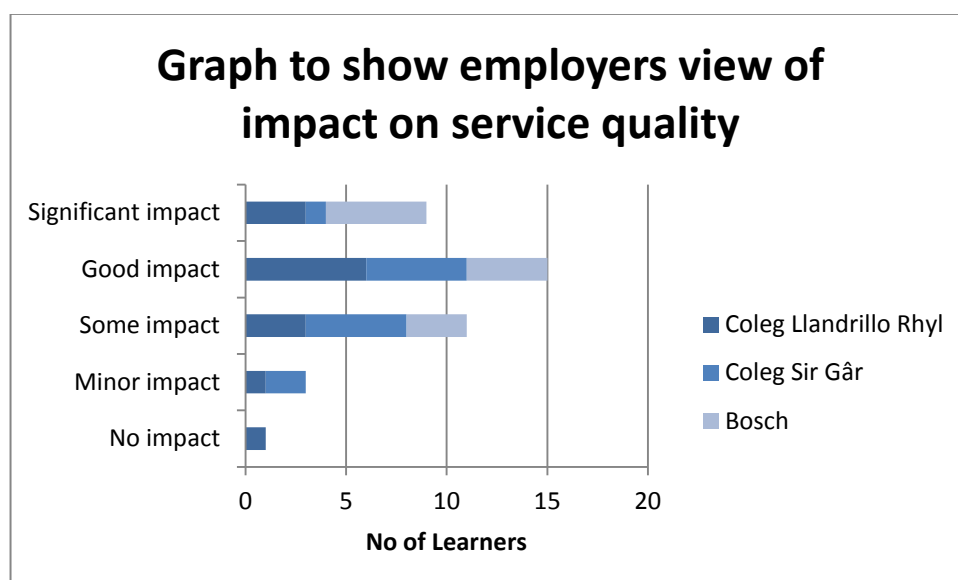


Figure 14 Graph to show employers view of impact on service quality

The graph above shows 60% of employers would say that there has been a large impact on service quality as a result of completion of the course. An explanation for the employers reporting low impact is similar to what was the case with applications of new skills – not all of the garages were able to afford to purchase all of the expensive pieces of equipment

used on the course. This was a concern for the garage owners as one quoted “Need to invest in expensive kit now and if we don’t hurry we will have forgotten what we were trained in!” Therefore the impact on service quality can be limited if don’t have all the equipment even if the learners have been successful in completing the course.

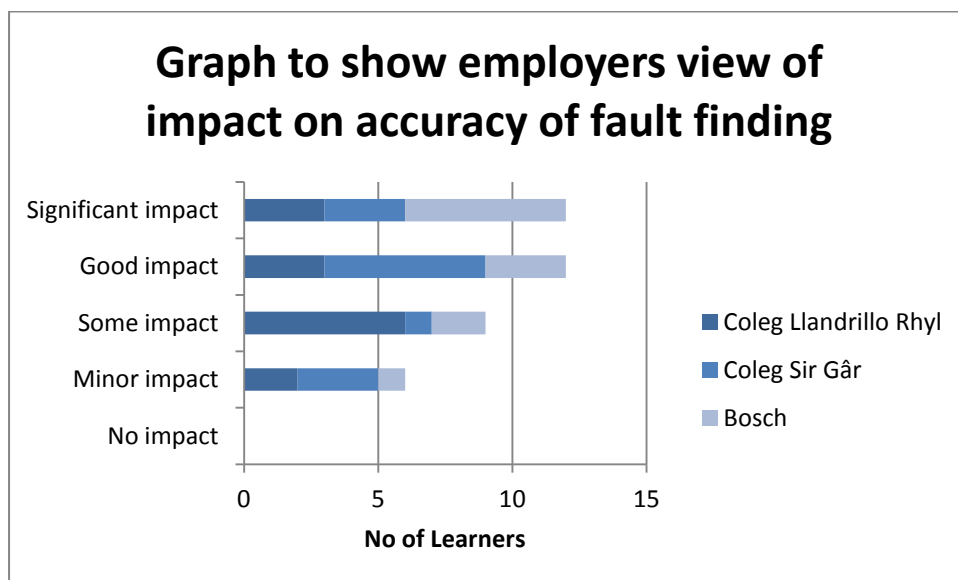


Figure 15 Graph to show employers view of impact on accuracy of fault finding

Most garages have been able to improve the accuracy of fault findings as a result of the course, 60% of employers viewed the impact of the course to be good to significant. Clearly this is a good result, as the objective of the training course precisely intended to train the learners in enhance fault finding skills. All of the employers recognised some impact on accuracy of fault finding, those who described the impact as minor, (15%), may already have the skills in-house or lack the equipment to fully embed the learning outcomes.

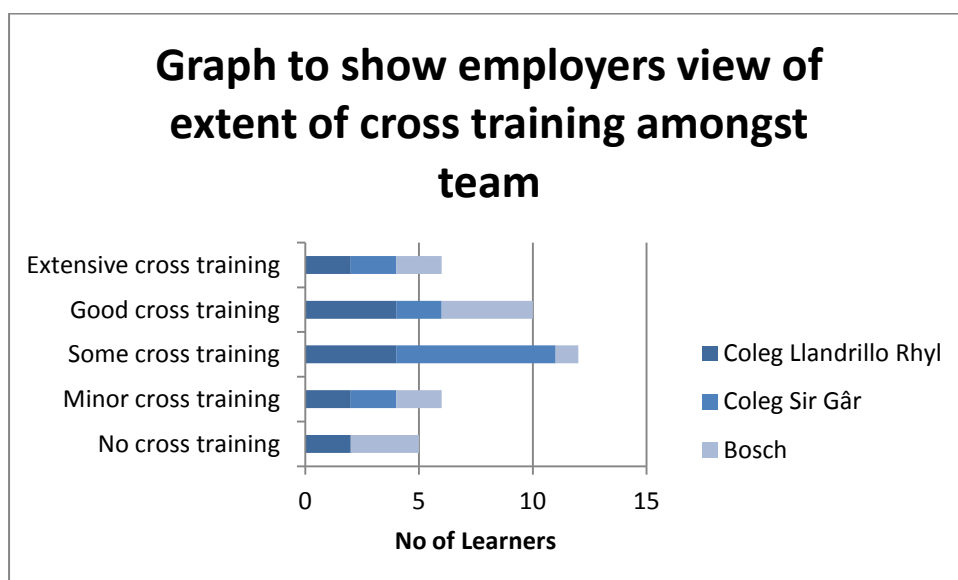


Figure 16 Graph to show employers view of extent of cross training amongst team

For the most part employers would say that there had been a significant amount of cross training within the garage. This was particularly the case for Coleg Sir Gâr where 85% of the

learners were able to cross train at least some amount. Coleg Sir Gâr had no learners who were completely unsuccessful in cross training. An explanation for some BOSCH and Coleg Llandrillo Rhyl learners not being able to cross train is that the owner may be the sole person working in the garage or there may be others working in the garage with defined roles such as reception/backroom staff.

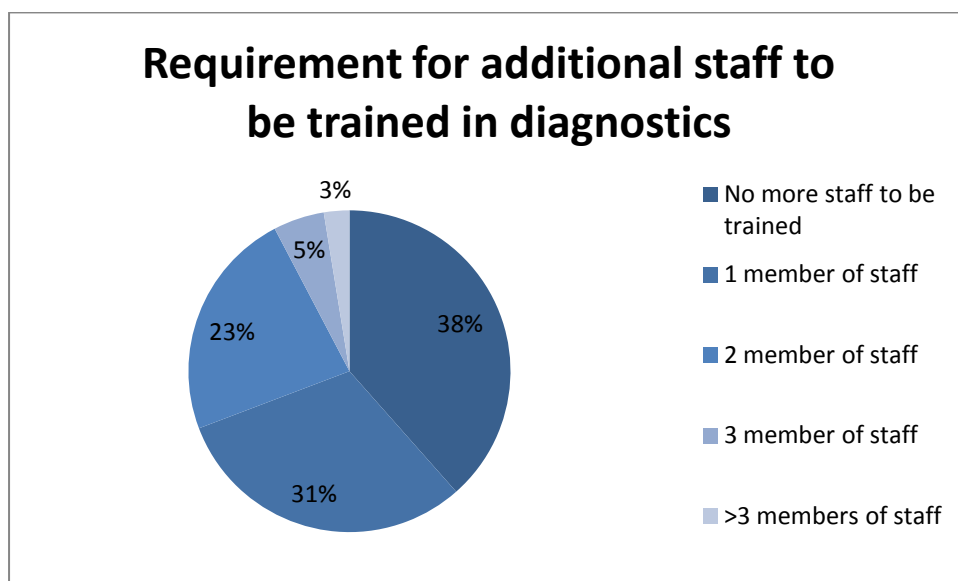


Figure 17 Requirement for additional staff to be trained in diagnostics

When questioned 72% of the employers had identified additional skill gaps amongst their staff.

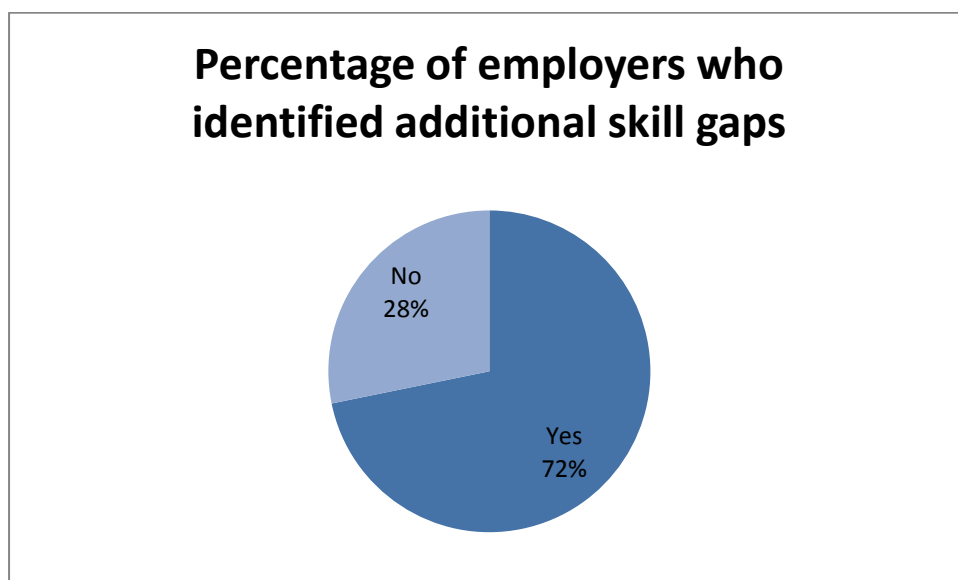


Figure 18 Percentage of employers who identified additional skill gaps

The employers were asked to elaborate on the areas where they perceived the skill gap or gaps to be. A significant number were interested in more advanced diagnostics training for their staff. Another area discussed was general mechanic skills, when pressed the employers could not be specific but were describing a more extensive and in-depth apprenticeship level training.

New technology was also a common phase which came up, one garage owner said,

“Technology is always moving forward, it’s good to keep skills refreshed.”

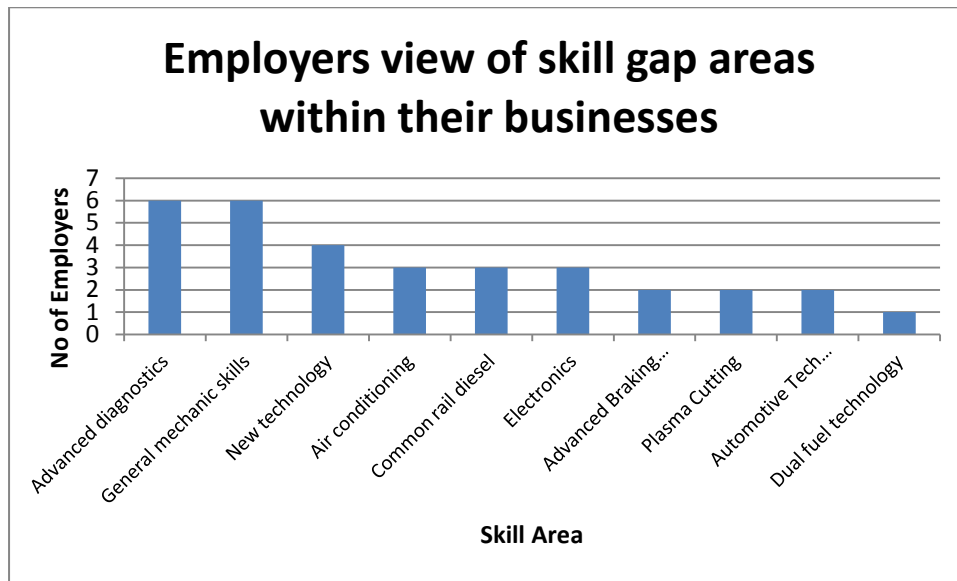


Figure 19 Employers view of skill gap areas within their businesses

As can be seen from the graph, the identified skill gaps came from a wide variety of areas, encompassing a range of different technologies, clearly there are many more opportunities for the IMI to offer training courses in this sector.

3.6 Cross Cutting Themes - Equal Opportunities

It was key objective that the project contributes to the promotion of equality in employment. From a gender perspective, the gender of the business owner was analysed and as can be seen below, 5% were female.

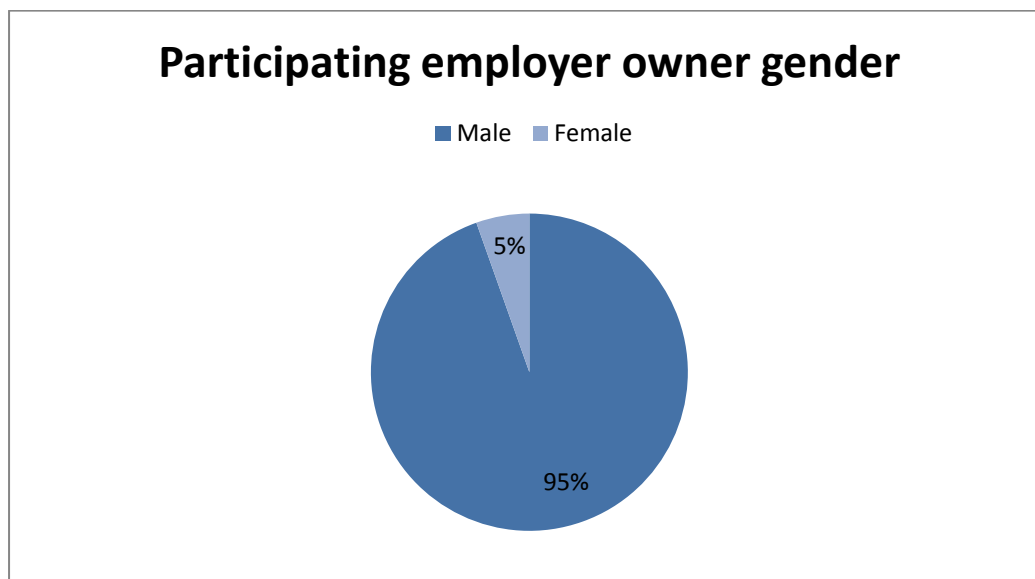


Figure 20 Participating employer owner gender

Interestingly, all of the upskilled learners were male; no females were trained over the two year programme. This is not particularly surprising as women are clearly under presented in this sector.

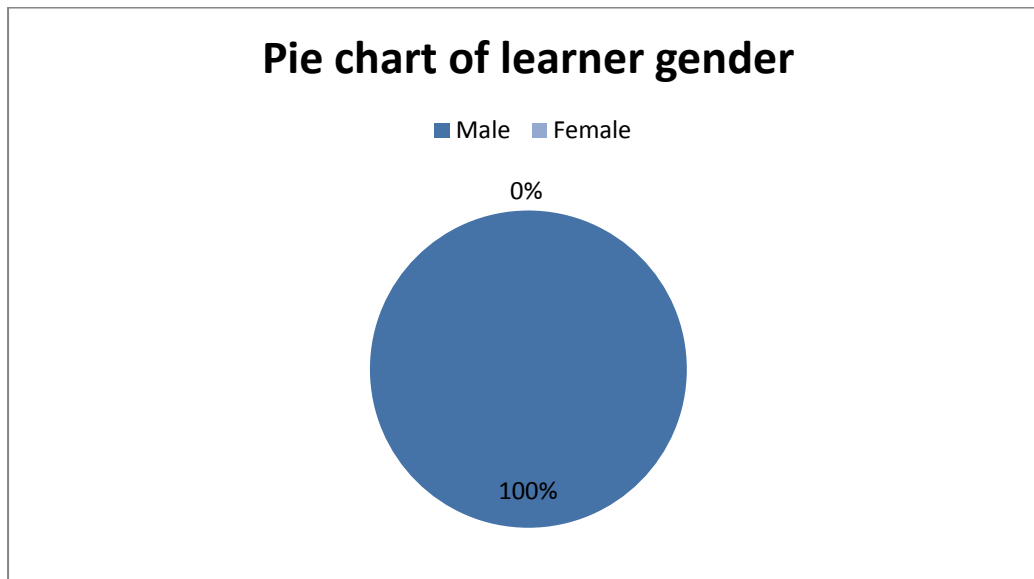


Figure 21 Learner Gender

It was desirable criteria for engagement, that the providers to have Welsh language speaking tutors. The research showed that all of the delivery was in English. The learners were surveyed and 19% described themselves as first language Welsh and 11% stated Welsh as their preferred method of communication.

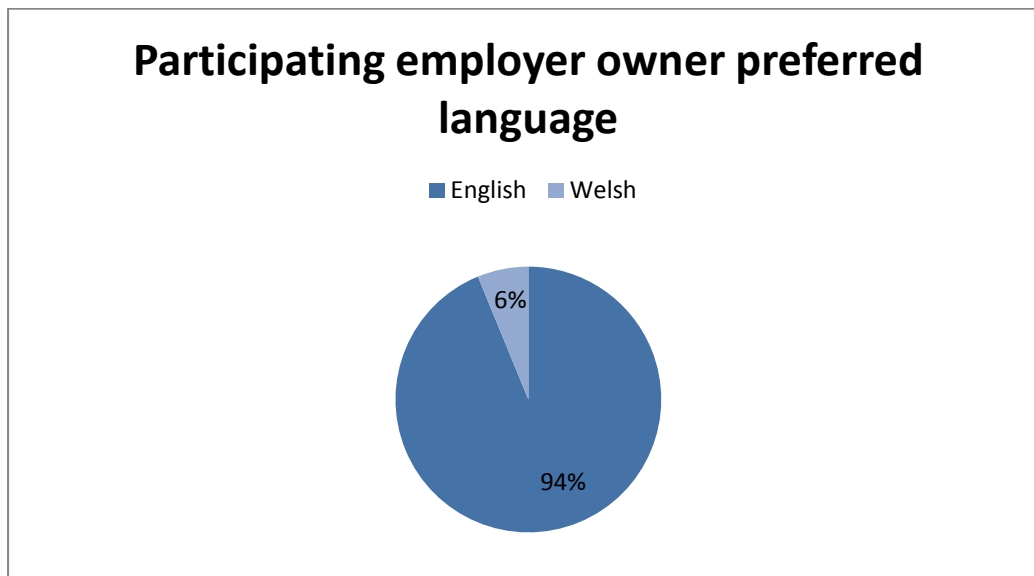


Figure 22 Participating employer owner preferred language

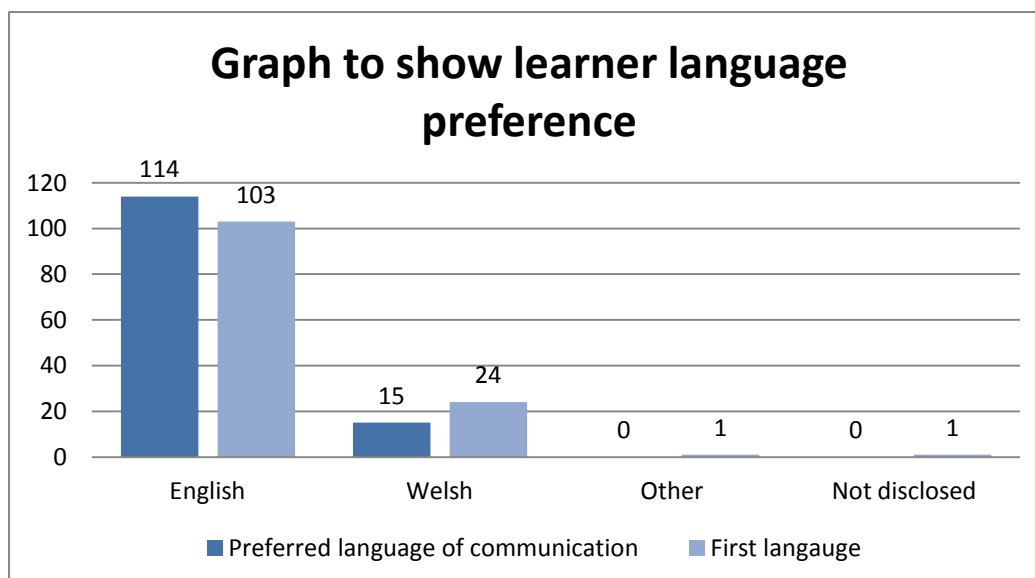


Figure 23 Graph to show learner language preference

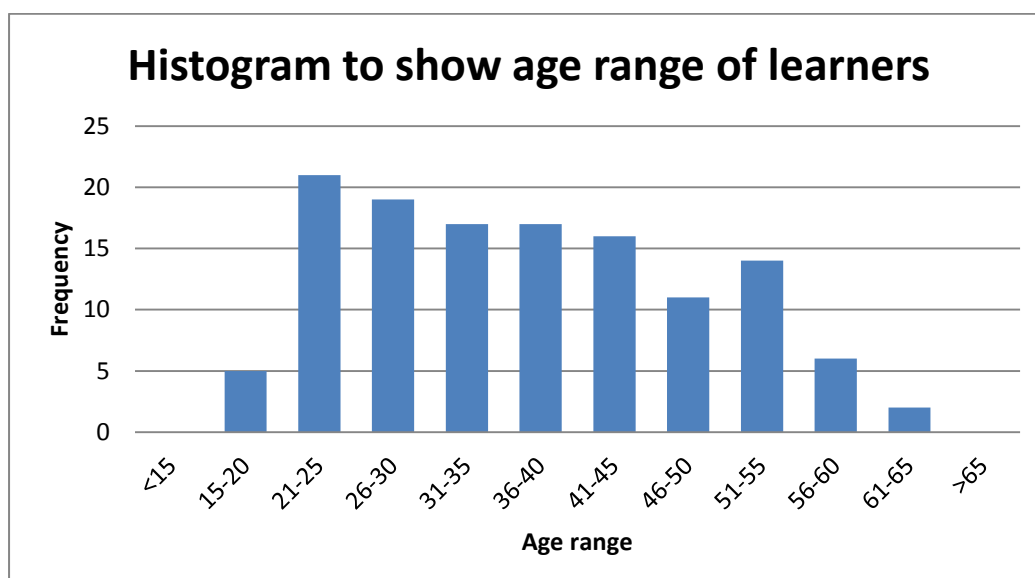


Figure 24 Histogram to show age range of learners

The age profile of the learners was analysed and the results were interesting, as there was a significant population of learners in each of the age ranges. Prior to the analysis one could have hypothesised that the learners would have been concentrated amongst the younger working population, as this age group is more likely to have had recent experience of classroom training through the education system. This is clearly not the case with the vehicle mechanics, as all age groups have participated.

This suggested that age is no barrier to learning new skills in this sector and that the teaching format must have supported the learners well. The immersive training format with practical application appeals to all learning styles.

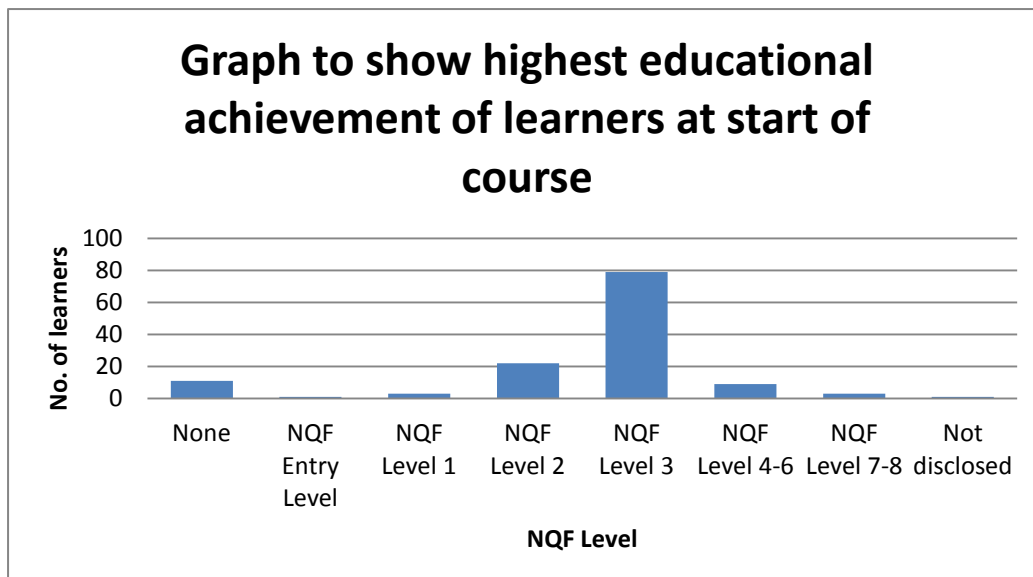


Figure 25 Graph to show highest educational achievement of learners at start of course

From the above data it can be seen there's a variation in the highest qualifications the learners have. 61% of the learner's highest qualifications are NQF Level 3's. An explanation of this is that there is certain expectancy that to work in the industry one must train up to NQF Level 3 or equivalent as to be able to prove proficiency in order to get jobs. This has been traditionally the case in the industry, with a long history of apprenticeships.

4.0 Learning Providers View

4.1 Coleg Llandrillo Rhyl

The evaluation team contacted Rhyl and the trainers agreed to participate in an in-depth Skype call.

Rhyl College were the first of the provider to start delivery of the vehicle diagnostics course. The trainer was ex industry had a great deal of experience in the college. He used his network to attract learners and this strategy was very successful in catalysing the course. Rhyl College trained 41 individuals in total over the two year project.



Figure 26 Rhyl College teaching area

Initially the Rhyl team planned the course to be half formal presentation format and half practical work, over the period of delivery this was changed to all of the training being delivered around the car. Indeed the facilities at Rhyl, shown above enabled this. The team at Rhyl were also keen to point out that they restricted the number of learner on a course to a maximum of 7 and utilised an evening format (6pm to 9pm) to ensure maximum participation.

The trainer explained that the learners would come into the college early at 5pm when their garages closed, and they would use the first hour to troubleshoot their own issues with cars they were working on. This peer-to-peer support was invaluable to the learners and demonstrated that the impact of the course extended well beyond the training in vehicle diagnostics.

Rhyl College asked their student to fill in end of course evaluation forms, these were collated and the analysis is presented in figure 7. Overall the feedback was highly positive and the learners are keen for more training courses to be run. The college suggested a number of areas for further work, including vehicle body electric systems and more in-depth vehicle diagnostics training.

The evaluation team questioned the project management. Rhyl described a very organised and effective process, they described a good standardisation process with the other delivery partners and were confident the learners had benefitted from highly relevant training which would benefit their employers businesses.

4.2 Coleg Sir Gâr

The evaluation team contacted Coleg Sir Gâr early in the evaluation programme, but it became apparent that the trainer who delivered the courses was no longer in post. The management staff however were available and were happy to feed into the evaluation process.

The team described following the QAA process to achieve standardisation but did comment that the course was tailored to meet industry needs and standards. In all the team at Sir Gâr trained 30 individuals in the vehicle diagnostics course and all the learners passed. Delivery was in an evening format, designed to fit around the working day. 45 hours in total were delivered in three hour sessions over 15 weeks. The same tutor was used throughout. The team were asked if the course was modified during the two year project period and slight changes were made to cater for different abilities of candidates.

The college described their facilities as a first class; their automotive training centre is a good environment for training and is well equipped, in order to deliver the course, the college needed to purchase additional diagnostic equipment and a diesel common rail injection car.

The team at Sir Gâr had a number of suggestions for further courses including diesel diagnostics. First class automotive training centre additional diagnostic equipment was purchased along with a diesel common rail injection car for delivery of the courses.

4.3 Bosch

The evaluation team met with a Bosch representative at one of their partner colleges, Merthyr Tydfil, where a number of the Bosch vehicle diagnostic courses were taught.

Bosch explained that as well as Merthyr College, the courses were delivered in Bridgend College, Cardiff & Vale and Newport College.

The facilities in Merthyr were excellent. The classroom was located just above the workshop, this enabled the learners the opportunity to combine theoretical learning with practical application without leaving the building. On the day the team visited the centre was very busy with students working on range of different vehicles under close supervision from college tutors. The learners were friendly and genuinely seemed to be enjoying their work. The Merthyr team explained that a number of their ex students had enrolled on the IMI course and were all highly positive about the opportunity created for more training.

The Bosch representative discussed the project management, and explained how there were regular meetings with the other college provider at the beginning of 2013 to standardise the subject matter.

Bosch used an intensive format for delivery due to logistic constraints. A single tutor was employed by Bosch to deliver all of the training courses regardless of location. This restriction led to the design of intensive training format, two days at one location followed by travel to the next college for a further two day intensive session. The maximum group size was 12, this was restricted to ensure that learners all had good access to the vehicle to practice their skills.

As we have seen previously 10 of the 58 learners recruited did not pass the course, the Bosch representative explained that rather than being a competency issue, the employers had not paid their fees to the course provider and so the learners did not pass.

The Bosch team were very pleased with the course uptake and received a high satisfaction level from the learners when they had completed the course. The team also visited some employers and again got positive feedback about the impact the course has had in their businesses. Bosch were keen to be involved in future training programmes and suggested a number of subject areas which they felt would be beneficial. In particular the vehicle diagnostics course only went so far and they felt there was scope and demand to extend the learning to be more in-depth and so have recommended an advanced diagnostic course be considered for any future projects.

5.0 Conclusions and recommendations

5.1 Conclusions

Businesses felt that the course had a positive impact on learners and the working methods they applied back in the day to day working environment.

The learners were drawn from a wide range of ethnic backgrounds, which broadly reflects the ethnic mix in Wales. All ages were represented and the research showed all got a significant level of learning from the course.

The research also showed that age does not appear to be a barrier to the desire to learn new skills. Respondents noted positive experiences across all age groups.

The companies surveyed expressed that the course offered good value for money, and the IMI data gathered previously shows an ROI (against the full course cost in one year) of almost 3 times which offers real benefits to the businesses.

The businesses reported a positive impact on profitability where the learning was applied. This impact was affected in a number of ways; the speed of diagnosis was improved as was the accuracy of diagnosis. It was reported that both of these improvements lead directly to improvements in customer satisfaction and the business owners are working to ensure the improvements are sustained.

It was clear that there is significant demand for diagnostic courses, this was reinforced by the over performance of the project. After a request for further funds was granted an extra cohort of learners was successfully recruited and trained.

The regional spread across Wales was good. This can be seen from the map data in the body of the report. The participating employees appear to be mostly located in or around the major population centres in Wales. This would be expected as the majority of vehicle repair is focused where the majority of vehicles are.

It was an aim of the project to ensure the whole sector is supported and this was to be focused particularly in rural areas where access to reliable transport infrastructure is more limited. The project providers did target the rural areas but were reluctant to turn away potential learners from the urban centres. As a result of this the Mid Wales participation was much lower than the more densely populated areas along the A55 corridor near the North coast and the M4 corridor in South Wales.

Whilst some work was done by the providers to standardise the courses across Wales, the research showed there were different approaches and course content. It should however be noted that the learner outcomes were common across the providers and the level of satisfaction with the course was universally high.

The evening learning style encouraged a higher level of peer to peer support with learners reporting that they arrived up to an hour prior to course start time to be able to work together on their own vehicles and embed the learning.

The providers were not obliged to conduct course evaluations with the learners. However all of the providers did evaluate the courses at the end of each cohort. Each provider conducted these evaluations in a slightly different way. The consistency of positive feedback from these self evaluations was remarkable.

The respondents commented that ongoing technology advancements in the motor industry present a significant challenge to the small and medium sized repair business. Traditional mechanical skills being replaced more and more by the need for more IT savvy skills. Vehicles are continuously advancing and even recently qualified apprentices expressed the gaps they saw developing between the courses they studied 4-5 years ago and the requirements of modern vehicles.

It was also reported that support for capital investment in the vehicle diagnostics equipment would be a fantastic additional support to be able to make the most of the training provided.

The IMI was identified by the employers as the industry leader for this type of training initiative and expressed the hope that there would be future opportunities to engage in developing the skills of their staff.

5.2 Recommendations

Recommendation 1: There is clear demand for training across Wales in vehicle diagnostics. It is recommended that the IMI works with the providers to 'mainstream' the courses developed during the pilot. If further funding can be secured to make the courses accessible to the SME organisations in the sector we are confident the demand is there.

Recommendation 2: The IMI should work with the providers and industry to design further courses in vehicle diagnostics that cover a broader range of topics and vehicles. The evaluation identified the demand for further up-skilling of the workforce. These courses should be affordable and transferable.

Recommendation 3: There were no female learners upskilled by this project, it is a recommendation that the number of females working in the sector in Wales is investigated with a view to attracting female learners onto any subsequent IMI training courses. Indicative statistics for the sector show less than 5% of motor technicians employed in Wales are female.

Recommendation 4: 11% of the learners expressed a preference for Welsh Language delivery. The IMI made it a requirement that Providers could issue course materials/assessment in the Welsh language; however the courses were all delivered in

English. It should be noted that the providers were able to deliver in Welsh but the cohorts chose to have English medium delivery. The IMI and the providers should review their policy for promoting Welsh language delivery, for example by targeting all Welsh language cohorts.

Recommendation 5: A consistent approach to course development, delivery and evaluation would be beneficial as it would support the IMI objectives for future accreditation of the diagnostic courses.

Recommendation 6: The IMI should consider how to extend the reach of the training programmes to ensure all potential learners, regardless of their geographical locations are catered for. This could include the use of web based learning or other similar distance learning methods.

Recommendation 7: There is an opportunity for the IMI to develop a link between the course learning and potential capital investment plans to enable the business owners to see the advantages of the purchase of sophisticated diagnostic equipment. It is recommended that any investment grants or advantageous loans schemes be integrated with the learning to maximise the impact of the skills transfer on the economy.