

What contributes to vocational excellence?

Overview of research outcomes from a study
conducted at WorldSkills London 2011



“I think what unites all the Competitors is more than just a competition ... a gathering of countries has been developed.”
- Competitor, China

“Would you like to become the best professional trainer in the world? Would you like to see recognised your high professional level? If the answer is yes, come to WorldSkills Competition.”
- Expert, Spain

WorldSkills International

WorldSkills International promotes worldwide awareness of the essential contribution that skills and high standards of competence make to achieving economic success and individual fulfilment. Since its inception in Spain in 1950, WorldSkills has conducted international skill competitions in different Member countries/regions every two years.

The 2011 WorldSkills international competition was held in London. The competition involved 931 Competitors in 46 skill categories from 56 WorldSkills Member organisations, along with 2,000 Experts, officials and delegates.

WorldSkills Foundation

The WorldSkills Foundation was established by WorldSkills International in 2011 to contribute to the WorldSkills vision through a program of research, advocacy and education.

Modelling Vocational Excellence (MoVE) International

MoVE International is the WorldSkills Foundation's first research partnership. The Foundation's project partners are Skills Finland, WorldSkills UK, WorldSkills Australia and the Dusseldorf Skills Forum.

The MoVE International research team is a collaboration between: University of Tampere, Finland; University of Oxford, UK; RMIT University, Australia; with support from Deakin University, Australia.

The MoVE International research project described in this document focussed on identifying what is involved in developing vocational expertise and excellence. The research team is most grateful to WorldSkills London participants who contributed information to the MoVE research study described in this document.

About the technical report

This document introduces some of the main findings from MoVE International's technical report. The technical report is titled:

- What Contributes to Vocational Excellence? Characteristics and experiences of Competitors and Experts in WorldSkills London 2011.

An overview – what contributes to vocational excellence?

Over six decades the reach and impact of the WorldSkills movement has grown steadily. WorldSkills has long stood as an advocate for vocational excellence and as a means of celebrating vocational expertise. The remarkable contribution of WorldSkills International to vocational excellence continues to expand.

Adding a formal research dimension to the WorldSkills movement is a yet another example of its determination to build a more sustainable global future through developing and applying excellent trade and professional skills. We welcome Modelling Vocational Excellence (MoVE) International to the WorldSkills community.

MoVE International is a research partnership brought together by the WorldSkills Foundation. Rather than focus on barriers to skills formation, MoVE International’s research explored skills development from a positive perspective.

The research team launched the project at WorldSkills London, setting out to establish what kinds of personal characteristics and attributes produce high calibre vocational performance. MoVE International researchers wanted to assess whether WorldSkills competitions make a difference to the vocational performance and professional identity of Competitors and Experts.

This document introduces MoVE International’s research. The document offers a glimpse of some early answers to a longstanding question: what contributes to vocational excellence?

Table of Contents

| | |
|--|----|
| Surveying WorldSkills London Competitors and Experts..... | 4 |
| Important findings from the research | 5 |
| Getting to know WorldSkills Competitors and Experts..... | 6 |
| What abilities do Competitors bring to WorldSkills? | 7 |
| How do WorldSkills Competitors see their obligations to others?..... | 7 |
| Why do they do it? | 8 |
| How do WorldSkills Competitors approach learning?..... | 9 |
| The professional identity of Experts..... | 10 |
| The professional identity of Competitors..... | 11 |
| What next? Some recommendations..... | 12 |

“I’ve had to take the responsibility of my independent studying in acquiring both practical and theoretical knowledge. The preparing has given me a lot of new information and skills to benefit in my career ... It has prepared and developed my teamwork skills.”

- Competitor, Finland

Surveying WorldSkills London Competitors and Experts

During WorldSkills 2011 in London the MoVE International research team distributed two surveys to collect research data. The surveys collected information about:

- the personal experience of involvement in WorldSkills
- the individual characteristics of vocational excellence.

One survey was for Competitors and one survey was for Experts.

Complete surveys were returned by:

- 413 WorldSkills Competitors from 38 WorldSkills Member countries/regions, and from all six skill sectors at WorldSkills London
- 165 Experts, also from 38 WorldSkills Member countries/regions and from all six skill sectors.

The survey of Competitors

The survey of Competitors had two components – Part A and Part B.

Part A asked Competitors to write a story about the experience of preparing for and participating in the WorldSkills international competition. In addition, Competitors were asked:

- how WorldSkills influenced their personal and professional development
- what importance WorldSkills may have in their careers.

Part B asked Competitors to answer questions about their personal attributes and characteristics.

The survey of Experts

The survey of Experts also had two components – Part A and Part B.

Part A asked Experts to write a brief story about the experience of preparing for WorldSkills and participating as Experts. In addition, Experts were asked:

- how WorldSkills influenced their personal and professional development
- what influence WorldSkills had on their careers.

Part B asked Experts to answer questions about the attributes and characteristics of Competitors in their teams.

“WorldSkills training ... at times was intense, repetitive boring, funny, challenging but most of all it has ‘shaped’ me as a person I am today.”

- Competitor, Australia

“I love to see them work and competing each other. They are all winners to me working so concentrated.”

- Expert, Netherlands

Important findings from the research

This MoVE International research project undertook initial research to generate greater understanding about what contributes to vocational excellence. The project has provided a starting point for further research.

MoVE International has completed a large scale research project which has delivered important findings. These findings are recorded in detail in the technical report. A small selection of the findings is listed in brief below.

- Of a range of abilities, WorldSkills Competitors rated themselves highest on bodily-kinesthetic ability – that is, the ease with which a person can do practical things with their hands. WorldSkills medal winners rated their bodily-kinesthetic ability higher than non-medal winners.
- WorldSkills Competitors placed high value on mastery – learning things as deeply as possible – and on being well-respected for what they can do.
- WorldSkills Competitors needed personal persistence and determination. Such personal attributes sat alongside technical skills as important aspects of expertise and excellence.
- Competitors were motivated mostly by challenge mixed with the desire to succeed, and the desire to learn – challenge alone was not enough.
- Experts were motivated by the opportunity to build their professional skills and to see young people performing at their best.
- Competitors and Experts shared similar ideas about what makes their trades or professions attractive. Both groups reported a passion for the work, enjoy learning, and like working with new technologies.
- Competitors saw themselves as skilled workers and as members of their professions. Some saw themselves more as experts. Few saw themselves as students or apprentices.
- Experts saw their main role as supporting the Competitors. They saw the Competitors as moving towards membership of their profession.
- Competitors believed the most significant changes produced by their WorldSkills experience were improved skills and confidence.

“Working at WorldSkills is a very rewarding experience, because being able to share experiences with people of other nationalities ... You can improve your day to day work, implement new ideas and open your mind to new work options.”

- Expert, Spain

Getting to know WorldSkills Competitors and Experts

MoVE International's research wanted to identify some of the distinctive characteristics of WorldSkills Competitors and participants. What was in their backgrounds that might help to explain how they achieved success at WorldSkills?

Competitor and Expert attitudes towards their trades or professions

The MoVE surveys asked Competitors and Experts to say what attracted them to their trades or professions. Both groups share similar attitudes:

- they have a passion for the work
- they enjoy learning
- they like working with new technologies.

Job and career prospects are important to Competitors who are starting their careers.

Is there a link between school performance and WorldSkills performance?

Competitors were asked to think about their school days and to rate their success in vocational subjects. They used a five point rating scale from poor to excellent. After WorldSkills London, the Competitors' competition outcomes were matched with their ratings of success in vocational subjects at school.

Figure 1 shows the results of that matching:

- the gold columns show results for Competitors who won a medal or achieved a competition score of 500 or more
- the silver columns show results for Competitors who achieved a competition score of less than 500.

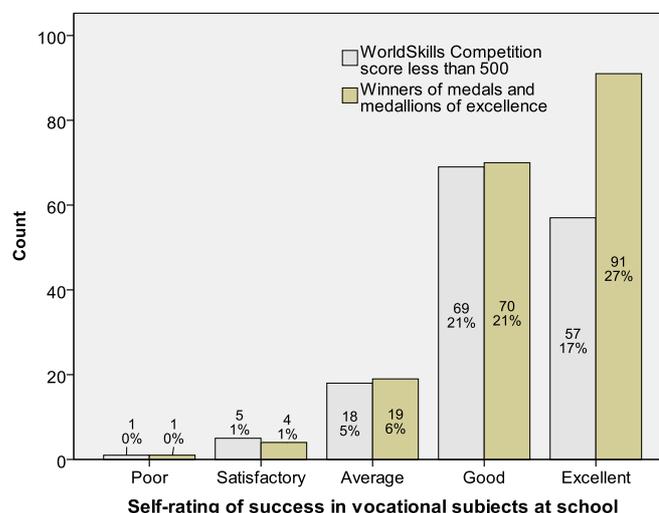


Figure 1: Relationship between vocational subject success and WorldSkills Competition outcomes

Competitors who performed best at WorldSkills had experienced good or excellent levels of vocational subject success at school.

The WorldSkills experience

Competitors and Experts wrote brief stories about their WorldSkills experience as part of the surveys they completed. The MoVE project analysed their stories to identify common themes. For Competitors, WorldSkills was many things – rewarding, tiring, fulfilling, stressful, hard work, challenging.

Many Competitors and Experts said WorldSkills was about more than medals. Their stories conveyed a sense of belonging to WorldSkills, and a feeling that WorldSkills will be significant in their working lives.

Competitors and Experts believed WorldSkills boosted their learning and improved their skills.

“This is the most amazing experience! To be among the top experts in the world under one roof allows for exchange of knowledge and trade ideas.”

- Expert, USA

What abilities do Competitors bring to WorldSkills?

Competitors rated themselves on nine abilities, such as bodily-kinesthetic, linguistic, mathematical-logical and interpersonal (or social) abilities. Bodily-kinesthetic ability relates to how easily a person can do practical things with their hands. Taken together, these abilities are known as multiple intelligences – a concept developed by Howard Gardner of Harvard University.

Across all WorldSkills Competitors:

- the highest rating was for bodily-kinesthetic ability – 4.1 out of a possible 5
- the lowest rating was for linguistic ability – 2.9 out of a possible 5.

Importantly, ratings differed across the six WorldSkills skill categories. For example, Figure 2 shows that:

- Information and Communication Technology skills Competitors rated themselves highest on mathematical-logical ability
- in Social and Personal Services skills Competitors rated themselves highly on interpersonal ability
- Competitors in Construction and Building, and Social and Personal Services, rated themselves highly on bodily-kinesthetic ability.

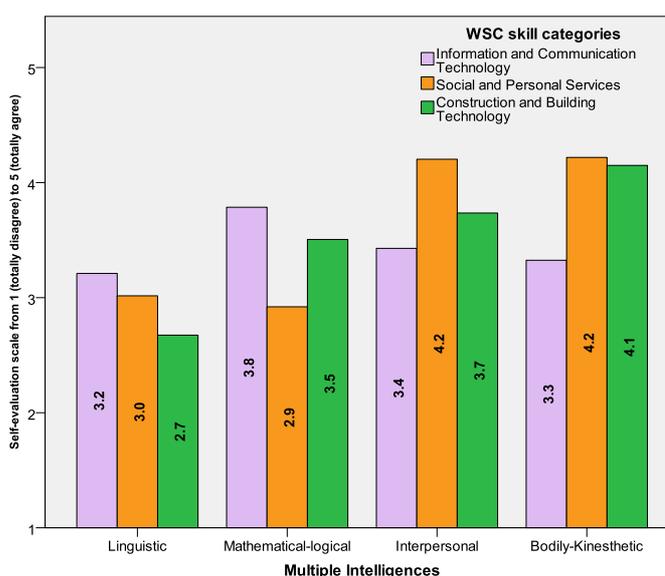


Figure 2: Ability self ratings by WorldSkills skill categories

MoVE International researchers compared WorldSkills medallists with other Competitors. They found that medallists rated their bodily-kinesthetic and interpersonal abilities more highly than other Competitors.

How do WorldSkills Competitors see their obligations to others?

The MoVE International project investigated how WorldSkills Competitors saw their obligations to others – for example, their work colleagues and fellow Competitors. Competitors rated themselves from 1-5 on six ethical sensitivity items like:

- 'I get along with people who think in different ways than me'
- 'I feel responsible for other people's well-being'
- 'I notice when I am facing an ethical issue at school, WorldSkills training or work'.

Across all Competitors, self-ratings were similar for each item. They ranged between 3.7 and 4.0 out of a possible 5. Again, there were differences between skill categories. For example, Competitors in Social and Personal Services skill areas (like cooking and beauty therapy) had the highest self-ratings on four out of six ethical sensitivity items.

“[WorldSkills is] an experience which is at the same time professional and personal, enriching from the point of view of your physical and mental capacity.”

- Competitor, France

Why do they do it?

Underpinning MoVE International's research project was an interest in understanding what factors contribute to achieving vocational excellence. One way of revealing these factors is to explore goal orientation. In other words, what prompts Competitors to:

- learn new work methods as thoroughly as possible
- show others their level of expertise
- seek or avoid new challenges related to WorldSkills training.

In the survey for WorldSkills London Competitors, goal orientation was examined by asking Competitors to rate themselves from 1-5 on items like these:

- 'I want to be as good as possible in my own skill area' – this is an aspect of mastery goal orientation
- 'My aim is to show others that I am in the top level in my skill area' – this is an aspect of performance-approach goal orientation
- 'I avoid showing others if I am facing difficulties in WSC training exercises' – this is an aspect of performance-avoidance goal orientation.

Looking at Figure 3, it is clear that the opportunity to demonstrate mastery was the key motivation for most WorldSkills London Competitors. Competitors rated mastery goal orientation at 4.4 out of a possible 5.

The research findings show that Competitors in each of the six skills sectors place high value on:

- learning things as deeply as possible – that is, mastery
- being well-respected for what they can do.

MoVE International's research found that:

- medal winners reported a significantly higher mastery goal orientation than Medallion for Excellence winners and Competitors with a competition score below 500
- medal winners and Medallion for Excellence winners had a higher self-ranked level of performance-approach goal orientation than Competitors with competition scores below 500.

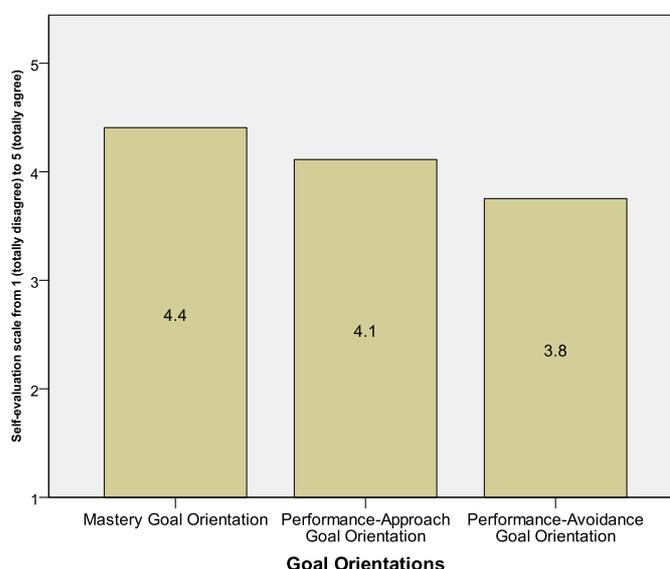


Figure 3: Competitors' self-rating on goal orientation

“Sure training takes a lot of focus, motivation, support, patience and time, but at the end of the day I want to be able to say: I did the absolute best I could and I feel great.”

- Competitor, Canada

How do WorldSkills Competitors approach learning?

People who learn well and deeply usually feel that they have considerable control of how and what they learn. They are self-regulating learners. The MoVE International project has begun to explore self-regulated learning among WorldSkills Competitors.

In the survey for Competitors, MoVE International's researchers asked Competitors to rate themselves from 1-5 against six dimensions that measure self-regulation. The first dimension measured was intrinsic motivation. Several statements on the Competitor survey measured intrinsic motivation, including: 'I prefer to try challenging work methods from which I can learn something new'.

The other five dimensions are listed below, followed by one of the statements on the Competitor survey that measured each dimension:

- extrinsic motivation – 'I want to be number one in my skill area in the WorldSkills 2011 competition'
- perseverance – 'I am focused'
- time management – 'I set clear goals for my learning'
- success due to ability – 'I am confident that I will master even the most difficult work methods in my WSC training'
- success due to effort – 'I am able to learn even the most difficult work methods if I practice hard enough'.

For each dimension, self-ratings for WorldSkills London medallists were higher than other Competitors' self-ratings. Figure 4 shows ratings for four of the six dimensions.

As with other factors that are described earlier in this document, Competitors in each of the skills sectors rated themselves differently on these dimensions. For example:

- Competitors in Transportation and Logistics, and in Social and Personal Services, rated extrinsic motivation more highly than other Competitors
- Competitors in the Social and Personal Services skills category rated themselves more highly than other groups of Competitors on three dimensions – perseverance, time management and success due to ability.

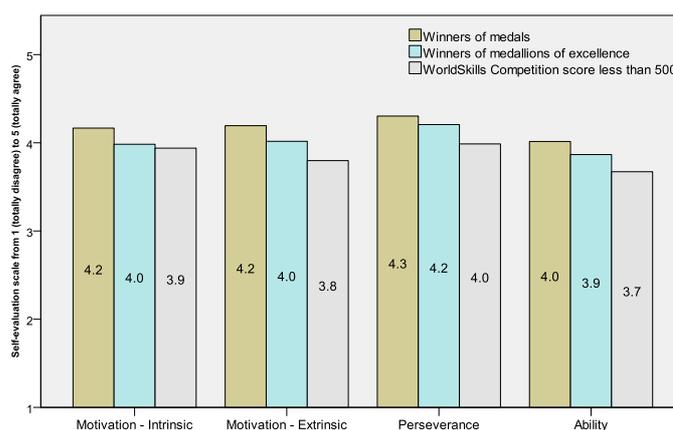


Figure 4: Competitors' self-rating on self-regulation

“[WorldSkills] showcases your Competitor skills against a benchmark of other countries. This gives you an indication of how other countries train and what you need to be doing to get yourself into a competitive position.”

- Expert, UK

The professional identity of Experts

MoVE International's research project aimed to find out if the WorldSkills experience influenced how Competitors and Experts felt about their trades or professions. Does involvement in WorldSkills help to form the professional identity of Competitors? Does involvement in WorldSkills consolidate the professional identity of Experts?

Fewer Experts than Competitors at WorldSkills London completed the survey. More comprehensive research is needed to improve our knowledge about how WorldSkills links to their sense of professional belonging. However, MoVE International's research suggests clear lines of investigation for further research.

A clear majority of Experts agreed with the following statements on the survey of Experts:

- 'by being involved in WorldSkills I have developed high level planning skills'
- 'by being involved in WorldSkills I have developed leadership skills'
- 'since becoming involved in WorldSkills I am able to benchmark my skills against national and international standards'
- 'since becoming involved in WorldSkills I have become more determined to keep my professional knowledge and skills up to date'
- 'since becoming involved in WorldSkills my commitment to my trade/profession has increased'.

High levels of Expert agreement to statements like these suggest there is a positive relationship between WorldSkills and professional growth, commitment to professional values and strong professional engagement.

Experts play a central role in the enduring success of national and international WorldSkills competitions. Their active encouragement of and assistance to Competitors is fundamentally important. Experts take this role very seriously. They were asked which of the three following statements described the most important thing about their WorldSkills experience:

- 'meeting new people in my profession'
- 'enhancing my career'
- 'supporting Competitors'.

Overwhelmingly they responded that the most important thing was to support Competitors.

"... the coaching of my Competitors was great, to give them my experience in the profession, I liked that very much, it was great to see how they developed in the profession and also personally."

- Expert, Switzerland

The professional identity of Competitors

MoVE International's research investigated what influence WorldSkills had on the formation of Competitors' professional identity. The survey for Competitors asked questions about four dimensions of emerging professional identity. The four dimensions were: self-recognition and confidence; learning; professional goal orientation; and recognition by others.

The research findings reveal that after becoming involved in WorldSkills, Competitors moved away from seeing themselves as students or apprentices. Through WorldSkills many Competitors began to see themselves as skilled workers. A small number began to see themselves as a master or expert in their trade or profession.

Competitors were asked to respond to statements about professional identity. If they:

- mildly agreed with a statement they gave it a rating of 3
- strongly agreed with a statement they gave it a rating of 4
- totally agreed with a statement they gave it a rating of 5.

Figure 5 shows the average ratings Competitors gave to just four of the statements they responded to.

The statement with the highest level of agreement among all Competitors was: 'I am able to learn things by myself'. This suggests WorldSkills participation significantly increased Competitors' capacity to learn independently.

In the stories they wrote when completing their surveys, it is clear that Competitors saw WorldSkills as a key opportunity for developing vocational excellence. By participating in WorldSkills they felt part of a professional community.

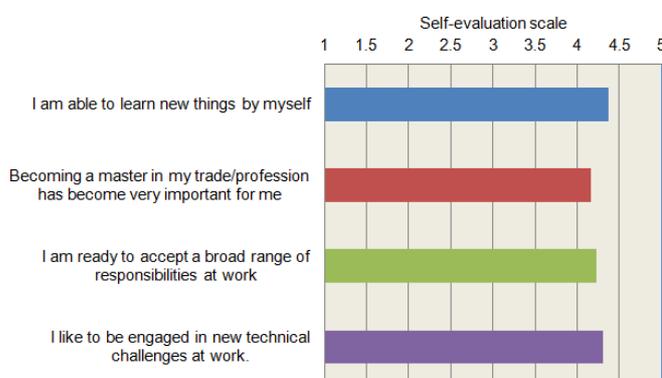


Figure 5: Competitors' rating of agreement with statements about professional identity

MoVE International's research indicates WorldSkills Competitors have high self-confidence and that they recognise themselves as professionals. The research could not compare Competitors with young people who did not participate in WorldSkills but are entering the same trades or professions. Are the levels of self-confidence and professional identity similar or different in both groups? Future research could make this comparison and help us understand more about what produces vocational excellence.

“It's been absolutely fantastic to be able to participate in a competition like the WorldSkills. This has led me to develop myself in my profession, but also as a person.”

- Competitor, Denmark

What next? Some recommendations

This document introduces some findings from MoVE International's research into vocational excellence. The findings as they are detailed in the technical report offer a platform for further action. Those actions could include:

Promoting vocational education and training

The research provides strong evidence for framing positive messages about vocational education and training. These messages can influence young people's thinking about vocational careers, and influence schools, training institutions and employers.

Communicating the research findings

The findings offer valuable lessons to vocational education and training researchers, opinion leaders and policy makers. A planned communications strategy for the findings will ensure the key research messages are widely known and understood.

Refining WorldSkills Competitor training

The findings can guide Competitors and Experts in how to prepare most effectively for WorldSkills competitions.

Advancing the research

MoVE International's research was a successful initial project partnership. Further research will heighten understanding about developing vocational expertise and encouraging vocational excellence. Examples of further research could include:

- a deeper exploration of how professional identity is formed
- investigating employer attitudes to WorldSkills.

Improving data collection for future research

If an expanded research study is conducted, MoVE International can improve how research information is collected from WorldSkills Competitors and Experts. It is especially important to gather team leaders' feedback on information collection during MoVE 2011.

WorldSkills Youth Forum

The findings can help WorldSkills Youth Forum leaders to design effective ways of maintaining an active network of former WorldSkills Competitors.

“This competition has changed my life and I will cherish every moment forever. I will carry on what I do and reach new goals. I will be forever grateful to all who trained me and brought me up to world standard and to all of those who supported.”

- Competitor, UK

MoVE International research team

Five researchers contributed to MoVE International's study on what contributes to vocational excellence. They were:

- Professor Petri Nokelainen, University of Tampere, Finland
- Dr Helen Smith, RMIT University, Australia
- Mr Mohammad Ali Rahimi, Deakin University, Australia
- Dr Cathy Stasz, ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE), University of Oxford, UK
- Dr Susan James, ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE), University of Oxford, UK.

Detailed report on this MoVE International research project

This document is based on the MoVE International research team's technical report. The technical report is titled:

- What Contributes to Vocational Excellence? Characteristics and experiences of Competitors and Experts in WorldSkills London 2011.

The technical report presents the research in detail, including information about the research study's theoretical approach and methodology.

Both the technical report and this overview document are available on the WorldSkills Foundation website. Please visit: www.worldskillsfoundation.org.

“One of the moments I feel real proud of being part of this team, is when I see my fellow Experts put all their effort in making it possible for not their own, but all Competitors to perform well. That's the spirit of WorldSkills.”

- Expert, Norway

“I had to make big commitments to get this far. I have changed my diet, my fitness, my mental approach. It has made me more confident for the future and it has opened my eyes up to the possibilities which are endless ... I have been amazed at all the different skills and talent on show.”

- Competitor, Ireland