

Challenges of junior ventilation and occupational hygiene practitioners -

A perspective from a junior MVSSA member

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ABSTRACT

Despite the large number of students attempting MEC examinations annually, only a handful are successful in achieving full certification. Discussions and interaction with Junior Environmental Practitioners across the industry have indicated dissatisfaction with the qualification, which lead to the drawing up of perceived problems that may contribute to the training and learning difficulties. These perceptions were later confirmed through a survey and an interactive presentation with junior members. There was no link between the results of the survey and the pass rate. It is recommended that several factors be considered to understand the challenges faced by juniors and to improve the perception of juniors towards a more positive view across the industry.

1. INTRODUCTION

Within the mining sector, there are many challenges associated with the development of relevant skills.

Amongst others, a legacy of poor educational opportunities, a complex tertiary education and training landscape and a poor basic education system, have resulted in many employees having few or low levels of skills. The national shortage of skills in all economic sectors exacerbates the challenges associated with the retention of staff, and increases the demands for training and development in the mining sector. The skills-development environment is also complex, with many policy, regulatory and legislative requirements. (Ally, 2016)

With changing technology and increasing legislation requirements, a major concern facing the mining industry, and particularly the ventilation and mine environment departments, is the quality and calibre of their staff members.

Informal discussions and interaction with Junior Environmental Practitioners across the industry, both coal and hard rock mines, has indicated a general dissatisfaction around qualifications as well as training and learning difficulties, including not knowing about the changing qualification programme that is due for implementation in the year 2020.

This then developed an interest to investigate the issues surrounding the general complaints from juniors and to find out if this was being experienced across the industry or it was from only the selected few individuals.

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2 BACKGROUND

Presently the highly qualified and experienced ventilation practitioners are being lost to retirement and private consultancy.

These individuals carry vast underground mining experience as working your way up through the ranks was the most common method in South African mines.

Over the years, there has been a decrease in the number of people qualifying in Mine Environmental Control (MEC) and this is shown in Figure 1 (van der Bank, 2017).

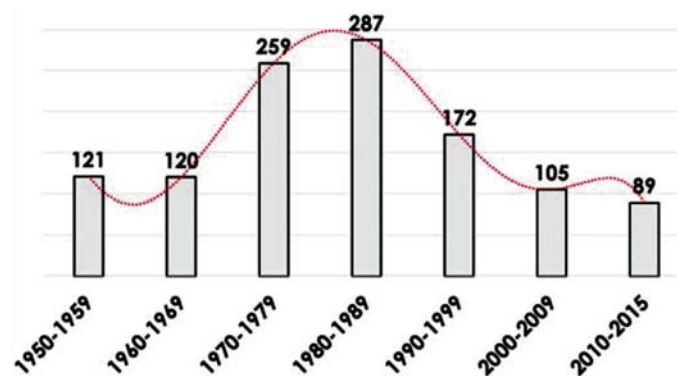


Figure 1. MEC certificate issued from 1950 to 2015 (van der Bank, 2017)

This decrease could be attributed to possibly many factors including the development of new fields that take some of the responsibilities and/or serve a similar purpose as the mine environmental controllers in the mine, sharing the responsibility and decreasing the need for the number of qualified people in present times.

Despite the large number of students attempting the MEC examinations annually, only a handful are successful in achieving full certification with 13 candidates in 2013 and 21 candidates in 2015 receiving their MEC advanced certificates.

Similarly for every examination sitting and examination paper written, only a few manage to pass the examination papers.

The following tables show the statistics of the Chamber of Mines (COM), MEC examination for Paper 1 to Paper 6, May and October 2012, 2014 and 2016 respectively (Cloete, 2017).

From the tables it is seen that there are an increased number of candidates writing the MEC advanced paper from 235 candidates in October 2012 to 336 candidates in May 2016.

Table 2. COM statistics for 2012 (MVSSA 2013)

	May-12			Oct-12		
	Wrote	Passed	%	Wrote	Passed	%
Paper 1	70	13	19%	48	3	6%
Paper 2	30	7	23%	45	8	18%
Paper 3	28	7	25%	32	3	9%
Paper 4	40	11	28%	36	14	39%
Paper 5	46	3	7%	37	7	19%
Paper 6	46	3	7%	37	7	19%
Total	260	44	17%	235	42	18%

Table 3. COM statistics for 2014 (MVSSA 2015)

	May-14			Oct-14		
	Wrote	Passed	%	Wrote	Passed	%
Paper 1	54	21	39%	100	29	29%
Paper 2	71	15	21%	57	1	2%
Paper 3	46	26	57%	36	3	8%
Paper 4	48	31	65%	30	4	13%
Paper 5	40	8	20%	51	6	12%
Paper 6	45	21	47%	43	5	12%
Total	304	122	40%	317	48	15%

Table 4. COM statistics for 2016 (MVSSA 2017)

	May-16			Oct-16		
	Wrote	Passed	%	Wrote	Passed	%
Paper 1	65	13	20%	44	11	25%
Paper 2	79	8	10%	69	8	12%
Paper 3	41	13	32%	37	11	30%
Paper 4	35	6	17%	50	7	14%
Paper 5	52	9	17%	62	25	40%
Paper 6	64	27	42%	46	29	63%
Total	336	76	23%	308	91	30%

Even though it cannot be seen with the given data how many are repeating the examination and how many are new entries, there is a general increase. It is also seen that the pass rate is very irregular despite the increasing numbers of people attempting these examinations, with Paper 4 managing a pass rate of 65% in 2014 and most of the other papers (modules) being lower than 50% and some reaching a pass rate of as low as 2% (Paper 2.October 2014). There are also irregularities with the same papers during the two examination periods and the different years.

3 DATA COLLECTION

3.1 Mine Ventilation Society South Africa Junior symposium

In an effort to investigate the general discontent of juniors, perceived challenges were drawn up and are listed below:

The main perceived challenges are:

- Lack of training material, including not even knowing that literature such as the MVSSA Workbooks exist, and are available.
- The certificates are perceived difficult and or unattainable, and the high failure rates make people become less motivated to continue with advancing in their studies.
- Lack of exposure to the MVSSA and related associations, including not even knowing that the MVSSA exists.

- Lack of leadership and mentorship meaning that they experience little knowledge sharing and transfer of practical skills from their supervisors.
- Mine budget cuts mean that juniors' attendance at training courses and programmes is limited
- Retrenchments and job losses create uncertainty to the junior members where they become less motivated to continue with their studies.

This list was presented at the MVSSA Junior symposium on the 15th of March 2017 in an interactive manner.

3.2 Questionnaire

An initial survey questionnaire covering commodity, mining group, position, access to training and training material, support and mentorship from seniors and the will to continue with the certificate up to the advanced level was sent out at the symposium.

With the assistance of the national MVSSA Council, the questionnaire was later revised and included additional questions and a rating system for some questions as well as a general comment section.

This questionnaire was then sent out through the MVSSA distribution channels to the different MVSSA branches.

4. FEEDBACK

The results reported here are from both the symposium response and the responses from the two questionnaires.

All numbers reported are from individual question responses answered by the survey group.

4.1 Response from symposium

The audience at the symposium consisted mostly of junior ventilation practitioners.

After an interactive presentation and discussion, the audience confirmed the perceived challenges and said they represent the different challenges they face. They also gave permission for these challenges to be further interrogated.

Some of the juniors at the symposium mentioned the difficulty of accessing the textbooks in their department. They were either locked in the manager's office, in bad condition or had to be shared among a number of colleagues.

Others mentioned the unavailability of their supervisors to assist with examination preparation due to the workload of managers and sometimes the lack of interest of managers.

4.2 Responses from questionnaire

A total of 32 responses were received with 18 from the coal and 14 from gold industries. No responses were received from platinum and other commodities.

The number of responses was reasonable and could be used for analysis and representation of the population.

Of the respondents, 96% know about the Mine Ventilation Society and 61% are members of the society. 55% have

attended MVSSA conferences and related gatherings and the majority rated the events above average.

The distribution of the respondents showed 62% having between 1-5 years working experience in the ventilation and/or related department and 48% with over 5 years working experience in these departments.

All participants have successfully passed the pre-requisite practical certificates.

A total of 80% have passed the Intermediate Paper 1 examination with 67% having passed the paper on the first sitting and 65% candidates have passed Intermediate Paper 2 with 55% having done so on the first sitting.

The general comment given about the difficulty of the syllabus was that it is sufficient and acceptable.

All respondents have some or all of the Mine Ventilation Society Workbooks depending on the level of the qualification (Intermediate or Advanced) that cover the syllabus of the examinations and 2% have the supporting (additional) textbooks and other publications contained in the material requirements of the certificates.

The majority (86%) of the respondents intend to study up to the Advanced Certificate and have indicated the will to pay for their own study material.

Those that have attended training courses (71%) have rated the quality of the courses above average and scoring them mostly 8 out of 10.

Even though mentors are not appointed for the candidates, 70% get support from their managers and supervisors.

Candidates voiced their concern about the lack of development strategies in their companies and the lack of opportunities despite having qualified.

They have also commented on the registration fee of the examinations being expensive and that the quality of the examination papers could be improved, with fewer mistakes and clearer charts and graph sheets.

5. DISCUSSION

The responses received were all through the MVSSA channels, indicating the possibility of not having reached people who are not affiliated to the society directly or indirectly, also possibly skewing the results in favour of the better-informed juniors, and those already studying or taking examinations.

The responses to the questionnaires did not identify and / or confirm the perceived problems that the junior ventilation practitioner's face compared to the responses received at the symposium, except for the minority who lacked support from supervisors and had not attended training courses.

The training courses and training material is sufficient for individuals to be able to cover the syllabus of the modules.

There is no link between the responses and the irregular pass rate and the declining number in qualifications in the

profession, since the syllabus and difficulty were rated sufficient and adequate.

All general comments revolved around the lack of development opportunities for juniors in the departments and requested an improvement in this regard.

6. CONCLUSION

The profession is not short of people wanting to enter into it; but of people who actual pass and qualify in the reasonable required time frame.

The challenge is to identify the problem behind the irregular pass rate of the candidates and focus on the career development strategies of juniors to mitigate the challenges of the 21st Century in mining.

The following factors could be considered:

- Whether the decrease in qualified practitioners is placing a strain on the mining industry
- The layout of the qualification and its relevance to the working individuals
- Relevance of the syllabus to changing technology and regulation
- Development of other studies or qualification related to mine environment control
- The current and future need of the skills in the industry.

To be able to mitigate the challenges of this industry in the 21st Century, skilled and diverse professionals are required.

It remains vital for the leadership in the MVSSA to help change the perception of junior members towards the field and particularly towards the qualification process into an improved one.

This can be achieved by enhancing the relationship between the different mining commodities, between juniors and seniors in the society, improving exchange of knowledge and information through mentorship; and supporting career development and growth by providing skills-based training courses and programs in conjunction with the already set Chamber of Mines Certificate programme.

REFERENCES

- Ally M.2016. chamber of mines.org.za/reports /2016/download /CM-IR16-focus-skills-development.pdf
- The Mine Ventilation Society of South Africa .2013. Report of Council .70th Annual General Meeting
- The Mine Ventilation Society of South Africa .2015. Report of Council .71st Annual General Meeting
- The Mine Ventilation Society of South Africa .2013. Report of Council .72nd Annual General Meeting.
- Van der Bank M.2017.Mine Ventilation Society South Africa. Junior Symposium Mponeng