

# Usefulness of Blog Activities for Learning About Workplace Safety in a Polytechnic

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## INTRODUCTION

Workplace Safety is important to workers, employers, and the country. According to the Ministry of Manpower (2018) workplace accidents in Singapore in 2017 resulted in “a loss of 544,687 lost man-days at a rate of loss of 69 man-days per million man-hours worked i.e. accident severity rate” (p. 1). See Table 1 for details of workplace injuries in 2017.

**Table 1. Work Place Injuries in Singapore in 2017**

	<b>Number</b>	<b>Rate (per 100,000 employed persons)</b>
<b>Workplace injuries</b>	<b>12,498</b>	<b>369</b>
• Fatal injuries	42	1.2
• Major injuries	574	16.9
• Minor injuries	11, 882	351

Source: Ministry of Manpower, 2018, p. 3

Accidents happen because of a lack of experienced, qualified workers, as well as safety officers, and the limited resources needed to meet adequate safety standards requirements (Seow, 2018). In April 2008, PM Lee Hsien Loong challenged stakeholders to set a new target for Workplace Safety and Health (WSH), and to decrease number of workplace fatalities from 2.8 per 100,000 workers in 2008 to below 1.8 per 100,000 workers by 2018. These were to be achieved by the following initiatives:

1. Equip employers, employees and WSH professionals with the right skills and capabilities to manage WSH and take responsibility for WSH outcomes.
2. Have supporting institutions – such as professional associations, industry bodies and training institutions – to identify the skills required, and guide the development of such capabilities.

(WSHCouncil, 2018, p. 1)

Temasek Polytechnic (TP) responded by offering “Workplace Safety and Health for Facility Management” as Diploma of Facility Management subject from April 2017. On successful completion of the subject, students are awarded the WSQ certification - BIZSAFE Level 2 and 4 from the Ministry of Manpower. As these students might be workplace safety officers after graduation, they should not only glean the necessary knowledge about workplace safety, but they will be committed to it.

Delivering this subject to full-time PET students in their first semester of their polytechnic education is challenging. Because these students would have had limited life and prior working experiences, they might not realise the relevance of the subject. One way to engage them would be to use the Blog in the curriculum as the younger generation today like social media. It will also prepare them to participate in workplace Blogs which are used for training and informal learning. The Bring Your Own Device (BYOD) initiative at TP would enable in-class Blog related activities to be conducted. As this was a new subject, a preliminary study would help highlight what was going well with incorporation of Blog activities and which aspects of the curriculum needed to be modified. Hence, the research questions were as follows:

1. How did the participants react to the blog?
2. How did it shape learning?
  - a. How did it help them with their final report?
  - b. How did it help with the acquisition and sharing of knowledge?
  - c. How did the participants view workplace safety after working on their blog?

## **INTERVENTION**

This 60 hour, 4 credit subject for first year, first semester Engineering IFM (Integrated Facility Management) students, was taught in two-hour face-to-face tutorial sessions twice a week. Class size ranged from 20 to 25, and students worked in groups of five members. It was designed for the BYOD classroom. The Blog activities were constructivist in nature, encouraging individual and social and collaborative learning. They required students to

discuss in groups and upload their responses on their group Blog in class, which was hosted on WordPress. With WordPress, students would have life time access and they could continue using it as their learning platform for their third year projects and beyond.

The Blog activities included collaborative assignments, personal reflections, peer sharing and summaries of their lessons. MindMap 2.0 was used to present summaries of research and information. Students were expected to share their reflections on a safety video. There were opportunities to critique and refine their group work before submitting their interim report. See Table 2 for details of the lessons involving Blog Activities.

**Table 2: Integration of Blog Activities in curriculum**

Lessons involving Blog Activities	Purpose of Blog activity
1. Week 1: Create a Group Blog using WordPress Icebreaking Activity: Share three favourite things about themselves	Forming a team  Connecting with group members
2. Week 2: Importance of workplace safety i. Watch video Shoelaces, WHS video Ministry of Manpower. (2018). <i>Labour Force in Singapore 2017</i> . Singapore: Manpower Research and Statistics Department. Retrieved 2018, from <a href="https://www.mom.gov.sg/~media/mom/documents/safety-health/reports-stats/wsh-national-statistics/wsh-national-stats-2017.pdf?la=en">https://www.mom.gov.sg/~media/mom/documents/safety-health/reports-stats/wsh-national-statistics/wsh-national-stats-2017.pdf?la=en</a> . Seow, B. Y. (6 Aug, 2018). <i>Parliament: 20 workplace fatalities in first half of 2018</i> . Retrieved 2018, from The Straits Times: <a href="https://www.straitstimes.com/politics/parliament-20-workplace-fatalities-in-first-half-of-2018">https://www.straitstimes.com/politics/parliament-20-workplace-fatalities-in-first-half-of-2018</a> . Workplace Safety and Health Council. (2016). <i>Shoelaces</i> . Singapore, Singapore: WHS Council and Ministry of Manpower. Retrieved 2018, from <a href="https://vimeo.com/224441463">https://vimeo.com/224441463</a> WSHCouncil. (2018). <i>Building WSH competencies in Singapore</i> . Singapore: Workplace Safety and Health Council. Retrieved 2018, from <a href="https://www.wshc.sg/files/wshc/upload/cms/file/Building%20WSH%20Competency%20Report_V7.pdf">https://www.wshc.sg/files/wshc/upload/cms/file/Building%20WSH%20Competency%20Report_V7.pdf</a> ii. Role play (consider various stakeholders role play) iii. WSH Regulations (class lesson)	Personal reflection on role played Refine reflection after WSH Regulation lesson Reflect on whole week's activity

3. Week 3: Research on proactive stance towards preventing accidents (in industry and personal life)	Personal reflection
4. Week 5: Spot the Hazard around the campus a. Post 10 photos of hazards per group b. Presentation in class based on photos in BLOG	Collaborative activity - Building knowledge and skill
5. Week 6: Hazard classification based on assigned topics (Physical, Biological, Fire, Ergonomic, Mechanical) a. Individuals research on assigned topics and place it in a mind map i. Work on one Hazard and provide example(s) b. Presentation of work displayed through mind map to class	Constructing and sharing knowledge using a mind map
6. Week 11: Critique on WSH Policies a. Online Search of WSH Policies of organisations (local and international) b. Checking their commitments in their policy statements against 7 criteria of an effective safety policy, c. Create policy for own their group interim report	Individual reflection on whether the online Search and critique activity helped them for their interim report

This case study conducted in the April 2018 semester, involved 73 in three classes taught by the same tutor. There were 31 males and 42 females between the ages of 16 and 26. They came from different educational backgrounds, with the majority from the GCE “O” level route, followed by those from the Institute of Technical Education (ITE) and others (the Poly Foundation Programme or PFP). See Table 3 for the details:

**Table 3 Participants’ profile by gender and entry qualifications:**

Gender	“O” level	ITE	Others (PFP)
Male	22	7	2
Female	34	5	3
Total	56	12	5

Data was collected in the following four separate sources:

1. Blog entries (activity 1 - 6)
2. Marks of continual assessment
  - Written Test 1 (14 - 18 May 2018)

- Written Test 2 (9 July - 13 July 2018)
  - Project 1 interim report (incorporating and applying what they had learnt from the Blog activities)
3. Survey (9th to 13th July 2018)
    - One YES/NO question and nine rating questions using a 5 point Likert scale, all of which were followed by open ended responses
    - It focused on their familiarity with the blog and whether it helped them learn
  4. Group Interviews (6th to 10 August 2018) focused on participant's reaction to the blog and attitude towards workplace safety.

The blogs were analysed; all qualitative data was organised by themes. The quantitative data was presented as descriptive statistics. The data was triangulated to understand their reaction to the Blog and its impact on learning.

## FINDINGS

### Reaction

The Blog was a new experience for most participants: 53 out of 73 participants were using it for the first time. While 47.95% liked it, a sizable group (34.24%) were ambivalent about it while a small group (17.81%) did not like it at all. See Figs 1 and 2 for details by gender and educational background.

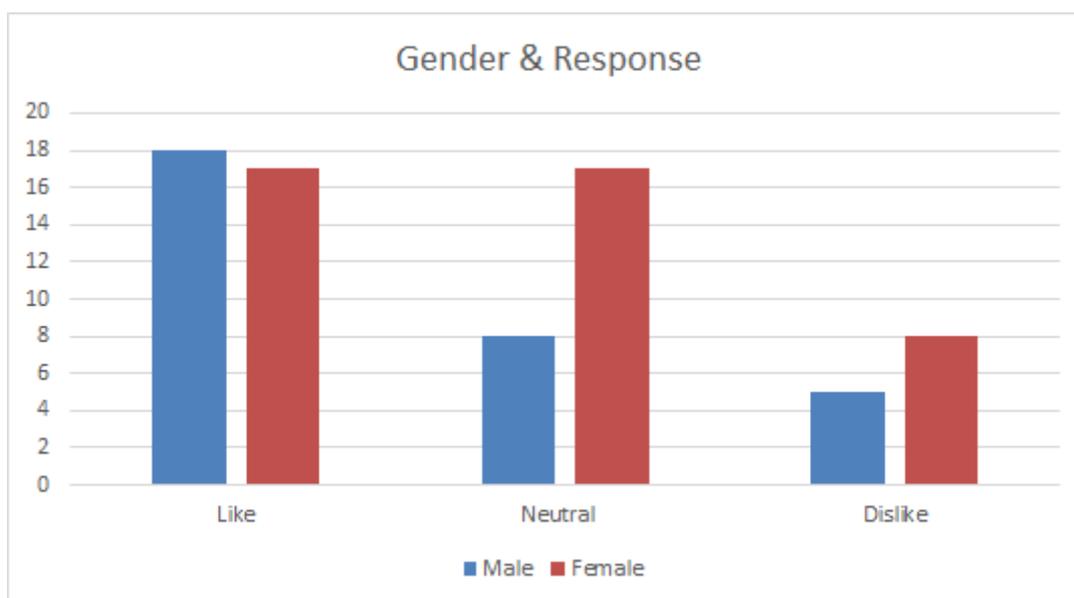
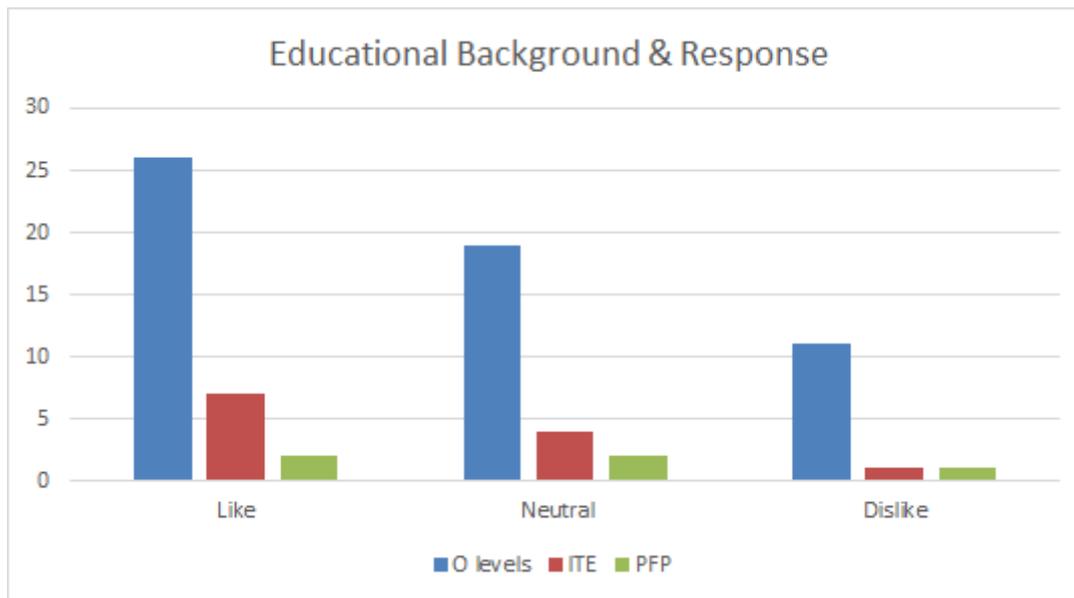


Figure 1. Response to Blog by Gender



**Figure 2. Reaction to Blog by educational background**

Those who liked the Blog enjoyed the new experience. One participant saw it a learning opportunity with the intention to have a personal Blog in the future. Another could see its future role:

... it provides me a solid foundation for our future job and its scopes . [sic]

Technical difficulties rather than the activities drove their dislike for the Blog. Firstly, it was the difficulty of setting it up the Blog was the common reason. Because participants were unfamiliar with software they made mistakes setting up the Blog. Undoing their mistakes was a hindrance rather than an opportunity to learn the software. Secondly, simultaneous Blog entries were not permitted, so participants had to wait for their turn to contribute. As such, there were times when they needed more time to complete their Blog at end of class.

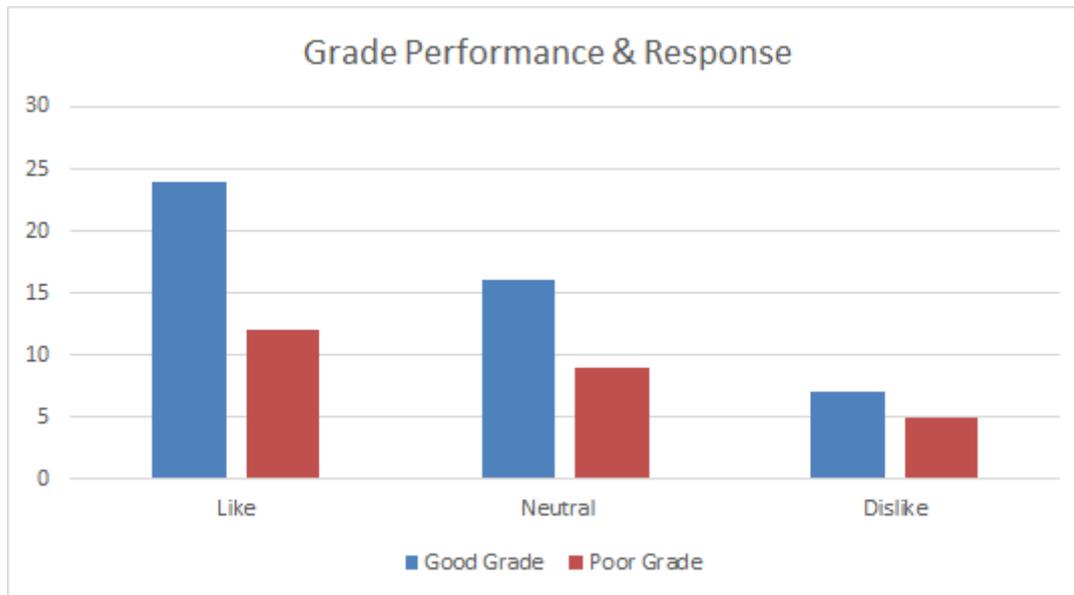
### **Shaped Learning**

Juxtaposing interim grades (i.e. Tests 1 and 2, and interim report) against their response to the blogs resulted in an interesting trend:

- For those who liked the Blog, more well than poorly as 32.88% scored an A or B grade, while 16.44% scored a C or D grade.
- For those who were neutral in their response to the Blog, more did well than poorly as 21.92% scored an A or B grade, while 10.9% scored a C or D grade and 1.4% failed.
- For those who did not like the Blog, more did well than poorly as 9.59% scored an A

or B grade, while 6.85% scored a C or D grade.

See Figure 3 for more details on their response and grade performance.



**Figure 3: Grade Performance and Response to Blog**

Unfortunately, the study did not include considering if the differences were critical.

The participants found that the Blog helped them learn for themselves as well as from others:

...it helps us to reflect on what we have learn in the class....

...we are able to look at other people's blog and learn a thing or two from their blogs...

...It ensured that students understood what was being taught and made sure we reviewed what has been taught. However, since we have to make sure the blog is neat and such, it could be some sort of a hassle...

... i think it was an innovativr [sic] way of making us revise/reflect on the lessons we had so as to encourage us to remember what we've learnt in an easier way ..

Participants found the Blog useful sharing of knowledge through collaborative work. See Fig 4 for sample of good Mind map:

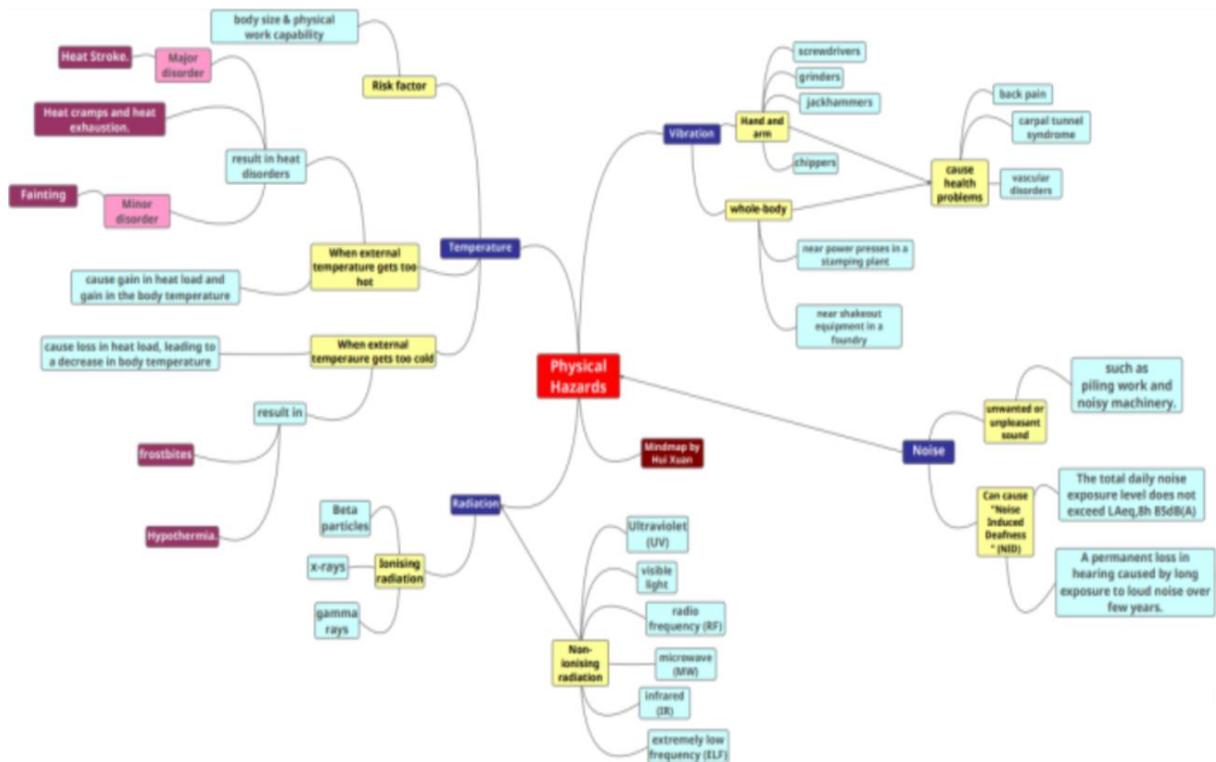


Figure 4: Mind map of Hazard Classification (Activity 5)

Participants were aware of its usefulness:

- ... It was a useful activity as it helped to visualize the different hazards and also taught me how to use the mind mapping software ...
- ... It is really easy to study using a mind map therefore I have a greater understanding about the topic that I'm studying...
- ... It was fun to do, and it helped me for my written test. I also found another way to study/revise. I could do my own mind map & it helped me with revision as well...
- ... me and my group mates can use each other mind map as reference ...

Activity 6 reflection on Critique on WSH Policies helped them be more aware of their own learning from the online and class activities and articulate the value of the learning process:

- ... It helped me to review the different policies that are currently being used. It helps in telling me about what is being considered important in the current society ..
- ... It has taught me how to come up with well-written policies.
- ... It is useful as it allow me to reflect and know how to critique and do policy for a safe and healthy workplace.
- ... Interesting point of view from learning experience
- ... it allow us to know that the samples online can be used as reference for us when

we are creating our own policy...

The series reflections for Activity 2 show the transformation that was taking place. The first blog after watching the "Shoelaces" video, showed an understanding of the issue: ... Being an injured person can cause lots of inconvenience such as not being able to move or work as efficiently as before. Hence the job opportunities will be reduced. This can lead to a loss in income and it will affect the whole family financially. The medical bill of the patient will also lead to the family needing more financial support. Therefore workplace safety and health are very important...

The second blog after the WHS regulation lesson reflects a more professional voice: ... Workplace Safety and Health (WSH) law helps to improve safety at workplace and prevent accidents to happen at all workplace by asking stakeholders to take reasonably practical measures at workplace. When a [sic]accidents occur, it may lead to the worker will be suffering in pain for being injured or even death. It will have an impact on the worker for a long period of time or even a lifetime... Without a job, the injured will lose the earnings that will be needed to support the family and to pay for the medical fee. Hence the family will need some financial support. With the WSH Act, the Work Injury Compensation Act (WICA) will compensate up to \$262,000 for permanent incapacity, \$204,000 for death of worker and \$36,000 for medical expenses.

The third shows a greater understanding of the issue:

#### *Reflection on video and WHS*

... After working on this video, i understand more about the WSH act and how it ensure both workers and employers at workplace to be responsible for their safety and how they manage any incidents that occurs such as compensating the injured or his family and providing treatments. By reading the work done by my group members, i also understand more about the importance of WSH Act at different prospective...

#### *How to Improve*

... Firstly, i need to think or research more on the impacts on the worker after being injured using more resources online. Next, I should do more elaboration on every point and explain how it is relevant to the WSH law so that others can understand the importance of the WSH law. Lastly, i should structure every point to make it link with the previous point so that it is more understandable and less confusing.

Eventually, he was able to frame a personal proactive statement for Activity 3:

... To take a more proactive stand towards preventing accidents, we can do a regular inspection to check if the environment and facilities are safe for people to use ....

Before any work take place, the employers need to ensure the workplace is safe by removing any hazards found before letting the employees in into the workplace. Employees can also attend courses to learn the rules to follow when doing something or operating a machine such as using personal protection equipment...

Changes in attitude were further explored in the group interview. A few participants disclosed that they were impacted enough to take precautions and warn others of dangers. They were proactive at home with family members and at school with their friends and classmates but not beyond that.

## **LESSONS LEARNT**

Several lessons were gleaned:

1. It should not be assumed that all young adults are familiar with and are proficient with Blogs.
2. Not every young adult will take to the Blog
3. Liking for the blog may not be linked to achievement (e.g. in tests and interim report) and vice versa
4. Blog activities can provide different ways of learning:
  - The Mind map is an efficient way and powerful way of learning in visual form
  - reflection with knowledge of WSH requirements helps develop a professional voice; reflection based on realistic situation encourages the development of empathy

## **RECOMMENDATIONS**

1. Address the technical difficulties: Overcome the Initial resistance with more practice, with more familiarity, problems with WordPress software will decrease.
2. Address the biases and needs of learners. The suggested follow-ups are:
  - Those who like the Blog and do well can be further encouraged to do more Blogging, or be given more challenging Blogging tasks
  - Those who don't like but do well are good students wibe would do well regardless; they should be encouraged to take up blogging for lifelong learning
  - Those who like the Blog but don't do well: need to show how to learn with blog
  - Those who do not like the Blog and didn't do well would need help in the subject as well as Blogging.

### 3. Focus on preparation for the working world

- Use this opportunity to plant the seed. Over time students will mature and hopefully appreciate the Blog more as they understand more the challenges in the world or enter the working world.
- Encourage learners to find links to the outside world e.g. attend safety forum / workplace symposium, participate in workplace safety competitions
- Encourage applicability to the real world by encouraging them to Blog about workplace safety for friends, family, their interest areas / personal hobbies
- Encourage a mindset change from merely completing work for academic grades, to learning for life, develop a growth mind set for lifelong learning.

## CONCLUSION

The Blog is an effective online learning platform more for enhancing knowledge, collaboration, and for commitment to workplace safety (limited to close circle of family and friends/ classmates). It would have been the first time using the Blog to discuss for Workplace Safety and Health. It would be relevant should they become WSH officers. The Blog is a promising platform for learning and working in this millennium. This study showed that incorporating the Blog was a way to introduce a useful skill for future work practice as most participants had never used the Blog before. This skill can be further developed if the Blog continues to be used consistently in subsequent semesters at TP.

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