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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Applying IT Communication Technology in Public Awareness and Education for Reducing Hazard Casualty in South East Asia Developing Countries" *by* S. P. Koay et al.

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We would like to reply to the comments of referee #1 as below:

A) This is a very good goal, but there is a large body of literature which needs to be acknowledged that examines IT Communications in a broader natural hazards context, and then where this study sits within it. Of those items cited (eight references) the vast majority are abstracts from conferences. This is not suitable for an international publication. The authors need to significantly understand the literature, and where to place their fundamental observations and questions within this literature.

There are several IT Communications literatures and reports that we did refer, some are listed in the references of our previous publications. Those literatures will be added as references in the revised version of this paper in addition to our previous publications. There are also a few abstracts in our references and I attended the presentation in the conferences of these abstracts. The research information obtained during their presentation are referred in our study. We would also like to add in the sentences (references) for example:

1) In 2007, Vyas foresaw by using IT Technology such as GIS, Remote Sensing, Internet and Warning System will reduce casualty in natural and man-made disaster. (Reference: Vyas, T. et al : Information Technology for Disaster Management, Proceedings of National Conference INDIACom-2007, Computing for Nation Development, 2007.)

2) Social media such as Facebook, YouTube, Twitter and so on, were used to give warning to reduce the risk of disaster in Dufty's study. (Reference: Dufty, N. :The use of social media in countrywide disaster risk reduction public awareness strategies, Australian Journal of Emergency Management, Volume 30 Issue 1 Articles: 26, 2015.)

3) Lai reported that the number of smart mobile phone users is increasing in Indonesia, Myanmar, Philippines and Vietnam. The usage of such mobile device to disseminate warning message becomes quite common. However, still most of these countries citizens still refer to radio/TV news stations as a reliable source. (Reference: Lai, C. et al: State of the use of Mobile Technologies for Disaster Preparedness in South East Asia, Report by Nanyang Technological University, Singapore, 2015.)

For the acknowledged references 1) "Japanese Experience with Long-term Recovery from the 2011 Tohoku Earthquake and Tsunami Disaster" by Hayashi, H., I attended his presentation. In his presentation contents, data which showed that Iwate Prefecture(4,673 death), Japan has less casualty than Miyagi Prefecture(9,541 death), Japan can be obtained from http://www.bousai.go.jp/2011daishinsai/pdf/torimatome20150909.pdf (in Japanese

Language) page 37/154 (National Research Institute for Earth Science and Disaster Prevention, Japan report), and public awareness education and evacuation training were carried out continuously in Iwate Prefecture is reported in page 36/258 in http://www2.pref.iwate.jp/∼bousai/kirokushi/allpage.pdf (in Japanese Language)(Iwate Prefecture Government report in Japan).

2) “Natural Hazards Education, Communications and Science-Policy-Practice Interface, SPM1.43”, it is a note which was prepared by Gill, J., Malamud, B. D., Taylor, F., Mohadjer, S, and Charrière , M., after EGU 2015 Workshop and can be obtained via www.groupspaces.com/SocialGeoscience/ .

3) The contents of "Study of rain induced landslides prediction and casualty prevention in Malaysia", ISM Symposium on Environmental Statistics 2015, Tokyo, 2015 are mostly based on "The Prediction of Water Table Flow in Slope for Early Warning System in Malaysia” (6th International Geotechnical Symposium on Disaster Mitigation in Special Geoenvironmental Conditions (6IGS Chennai 2015)) pp 491 – 494 and “Information Technology for Disaster Management”, (National Conference INDIACom-2007, Computing for Nation Development, 2007).

4) The references of "Study of Disseminating Landslide Early Warning Information in Malaysia", EGU General Assembly 2015, Vienna, 2015 are 1. Hiramatsu Shinya, Mizuyama Takahisa, Ogawa Shigeru, Ishikawa Yoshiharu, (1992) Influence of Rainfall Time Distribution on Shallow Landslides. Japan Society of Erosion Control Engineering Vol.44 No.5, Ser. No.178 2. Komamura Fujiya, (1988) Estimation of Critical Volume of Rain to Surface Failure Occurrence. Journal of Japan Landslide Society 25-1 3. Koay Swee Peng, Lateh Habibah, Sakai Naoki, Morohoshi Toshikazu and Fukuzono Teruki, (2008), The Preliminary Study on Landslide Prediction Model in Malaysia. The First World Landslide Forum, ICL 2008, Tokyo, pp. 493-498 4. Koay Swee Peng, Lateh Habibah, Murakami Satoshi, Koyama Tomofumi, Sakai Naoki and Jamaludin Suhaimi (2014), Slope Monitoring and Landslide Disaster Mitigation in Kyoji Sassa et. al. (editors), Landslide Science For A Safer Geoenvironment, Volume 4, The Interna-

tional Programme on Lndslides (IPL), Publisher: Springer. ISBN 978-3-319-04998-5 5. Nunokawa Osamu, Sugiyama Tomoyasu, Ota Naoyuki, Hata Akihito, Hori Michihiro, Kamemura Katsumi and Okada Katsuya, (2010) A Method To Calculate Expected Frequency of Rainfall-Induced Slope Failure Considering Train Operation Control. Journal of Japan Society of Civil Engineers Ser. C Vol. 66 No. 1, pp. 78 – 88

5) Most of the contents in "The Study on Landslide Disaster Mitigation and Management Using Numerical Analysis in Malaysia, Japan Geoscience Union Meeting 2013, Makuhari Messe, Chiba, 2013" are from Landslide Prediction Using Numerical Analysis, Caspian Journal of Applied Sciences Research, 2(AICCE’12 & GIZ’ 12), 2013, pp. 336-342, http://www.cjasr.com ISSN: 2251-9114, 2012 CJASR

B) Research methodology. There is not a clear research methodology here. Is it the questionnaire (and if so, what were the questions)? How many students were there? Was there a methodology if how these particular classes were chosen?

1) We appreciate the comments from the referee. We would provide the detailed information of our research methodology in the revised version of this paper. Below is the answer for the referee: Please refer to attached files for the questionnaires (original and translated in English Language) and, workshop contents and questions during the workshop (original and translated in English). We conducted 3 education workshops. There were 50 students in SK RPS Banun(1st workshop), 220 students in SRKC Perempuan Cina(2nd workshop), 150 students in SJK Minden Height(3rd workshop). We randomly picked 50 students answers from SRKC Perempuan Cina and SJK Minden Height to make it the same number of students as in SK RPS Banun. We requested the headmaster and headmistress to select 11 years old to 12 years old students. They assigned Primary Year 6 Students to attend our workshop in the schools.

We would like to apologise if our above reply to the referee is not suitable or still insufficient.

Please also note the supplement to this comment:
http://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2016-15/nhess-2016-15-AC1-supplement.pdf

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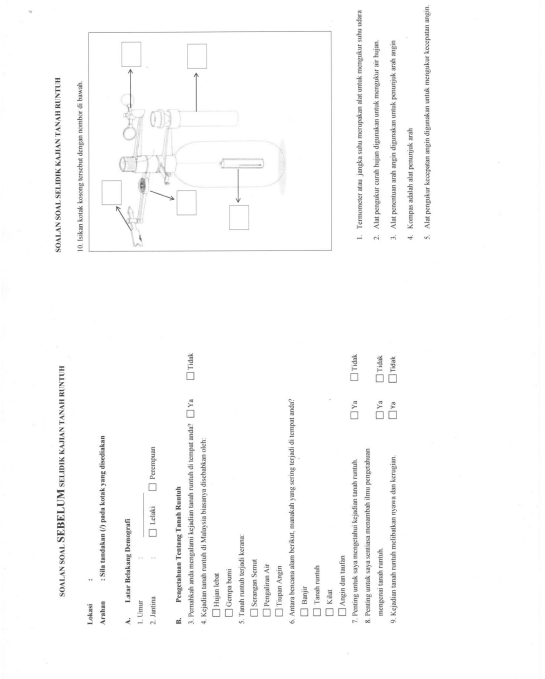


SOALAN SOAL SEBELUM SELIDIK KAJIAN TANAH RUNTUH

Lokasi :
Arahan : Silu tandakan (/) pada kotak yang disediakan

A. Latar Belakang Demografi
1. Umur
2. Jantina ☐ Lelaki ☐ Perempuan

B. Pengetahuan Tentang Tanah Runtuh
3. Pernahkah anda mengalami kejadian tanah runtuh di tempat anda? ☐ Ya ☐ Tidak
4. Kejadian tanah runtuh di Malaysia biasanya disebabkan oleh:
☐ Hujan lebat
☐ Gempa bumi
5. Tanah runtuh terjadi kerana:
☐ Serangan Semut
☐ Pengalaran Air
☐ Tiupan Angin
6. Antara berikut alam berikut, manakah yang sering terjadi di tempat anda?
☐ Banjir
☐ Tanah runtuh
☐ Kilat
☐ Angin dan tanfan
7. Penting untuk saya mengetahui kejadian tanah runtuh. ☐ Ya ☐ Tidak
8. Penting untuk saya sesiasa menambah ilmu pengetahuan mengenai tanah runtuh. ☐ Ya ☐ Tidak
9. Kejadian tanah runtuh melibatkan nyawa dan kerugian. ☐ Ya ☐ Tidak

SOALAN SOAL SELIDIK KAJIAN TANAH RUNTUH

10. Isikan kotak kosong tersebut dengan membar di bawah.

1. Termometer atau jangka suhu merupakan alat untuk mengukur suhu udara
2. Alat pengukur curah hujan digunakan untuk mengukur air hujan.
3. Alat pemantau arah angin digunakan untuk penunjuk arah angin
4. Kompas adalah alat penunjuk arah
5. Alat pengukur kecepatan angin digunakan untuk mengukur kecepatan angin.

Fig. 1.

Fig. 2.

C7

SOALAN SOAL SELEPAS SELIDIK KAJIAN TANAH RUNTUH

Lokasi :
Arahan : **Sila tandakan (/) pada kotak yang disediakan**

A. Latar Belakang Demografi

1. Umur : _____
2. Jantina : ☐ Lelaki ☐ Perempuan

B. Pengetahuan Tentang Tanah Runtuh

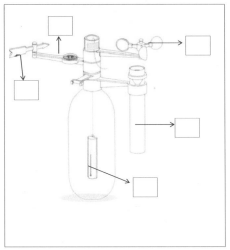
3. Pernahkah anda mengalami kejadian tanah runtuh di tempat anda? ☐ Ya ☐ Tidak
4. Kejadian tanah runtuh di Malaysia biasanya disebabkan oleh:
   - ☐ Hujan lebat
   - ☐ Gempa bumi
5. Tanah runtuh terjadi kerana:
   - ☐ Serangan Semut
   - ☐ Pengaliran Air
   - ☐ Tiupan Angin
6. Antara bencana alam berikut, manakah yang sering terjadi di tempat anda?
   - ☐ Banjir
   - ☐ Tanah runtuh
   - ☐ Kilat
   - ☐ Angin dan taufan
7. Penting untuk saya mengetahui kejadian tanah runtuh. ☐ Ya ☐ Tidak
8. Penting untuk saya sentiasa menambah ilmu pengetahuan mengenai tanah runtuh. ☐ Ya ☐ Tidak
9. Kejadian tanah runtuh melibatkan nyawa dan kerugian. ☐ Ya ☐ Tidak

C. Sikap

10. Saya lebih bersedia untuk menghadapi kejadian tanah runtuh pada masa akan datang. ☐ Ya ☐ Tidak
11. Saya mengambil tahu tentang kejadian tanah runtuh kerana ia penting untuk menyelamatkan nyawa. ☐ Ya ☐ Tidak

SOALAN SOAL SELIDIK KAJIAN TANAH RUNTUH

12. Isikan kotak kosong tersebut dengan nombor di bawah.



1. Termometer atau jangka suhu merupakan alat untuk mengukur suhu udara
2. Alat pengukur curah hujan digunakan untuk mengukur air hujan.
3. Alat penentuan arah angin digunakan untuk penunjuk arah angin
4. Kompas adalah alat penunjuk arah
5. Alat pengukur kecepatan angin digunakan untuk mengukur kecepatan angin.

13. Sekiranya diberi pilihan, adakah anda berminat untuk mengikuti kelas seperti ini, pada masa akan datang?

1. Ya ☐
2. Tidak ☐

Fig. 3.

C8

QUESTION BEFORE LANDSLIDES EDUCATION

Location : **(school name)**
Instruction : **Please tick (/) in every box**

A. Demographics

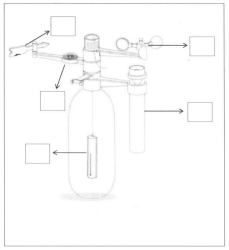
1. Age : _____
2. Sex : ☐ Male ☐ Female

B. Knowledge on Landslides

3. Did landslides happen near to your house? ☐ Yes ☐ No
4. Landslides happened mostly because of
   - ☐ Heavy rain
   - ☐ Earth quake
5. Which will trigger landslides
   - ☐ Strong wind
   - ☐ Heavy rain
   - ☐ Lightning
6. Among the below natural disaster, which often in your place?
   - ☐ Flood
   - ☐ Landslides
   - ☐ Thunder
   - ☐ Typhoon
7. Is it important to know about mechanism of landslide? ☐ Yes ☐ No
8. Should I know often getting more knowledge on landslides ☐ Yes ☐ No
9. Landslides cause losses of money and casualties ☐ Yes ☐ No

QUESTION ON LANDSLIDES STUDY

10. Fill in the blank with the number



1. Thermometer is for measuring air temperature
2. Rain gauge is for measuring rainfall intensity
3. Anemoscope is for pointing the wind direction
4. Compass is for getting the direction
5. Anemometer is for measuring wind speed

QUESTION AFTER LANDSLIDES EDUCATION

Location : (school name)

Instruction : Please tick (√) in every box

A. Demographics

1. Age : _____

2. Sex : ☐ Male ☐ Female

B. Knowledge on Landslides

3. Did landslides happen near to your house? ☐ Yes ☐ No

4. Landslides happened mostly because of

☐ Heavy rain

☐ Earth quake

5. Which will trigger landslides

☐ Strong wind

☐ Heavy rain

☐ Lightning

6. Among the below natural disaster, which often in your place?

☐ flood

☐ landslides

☐ Thunder

☐ Typhoon

7. Is it important to know about mechanism of landslide? ☐ Yes ☐ No

8. Should I know often getting more knowledge on landslides ☐ Yes ☐ No

9. Landslides cause losses of money and casualties ☐ Yes ☐ No

C. Readiness

10. I have well prepared to face landslides in future ☐ Yes ☐ No

11. Knowledge on the happening of landslides is very important as it will save my life ☐ Yes ☐ No

QUESTION ON LANDSLIDES STUDY

12. Fill in the blank with the number

1. Thermometer is for measuring air temperature
2. Rain gauge is for measuring rainfall intensity
3. Anemoscope is for pointing the wind direction
4. Compass is for getting the direction
5. Anemometer is for measuring wind speed

13. If you have a chance to attend such education, will you attend?

1. Yes ☐
2. No ☐

Fig. 4.