

BAB VI

KESIMPULAN DAN SARAN

6.1 Kesimpulan

Berdasarkan penelitian yang telah dilakukan, maka dapat ditarik kesimpulan sebagai berikut:

1. Pada penelitian ini, kecenderungan emosi mahasiswa dapat dideteksi melalui aktifitas *posting* pada twitter dengan menggunakan sistem analisis sentimen. Hasil klasifikasi dari analisis sentimen diuji menggunakan WEKA dengan multilayer perceptron untuk mengetahui prosentase kebenaran. Prosentase kebenaran dari hasil analisis sentimen lebih dari 85%, sehingga dapat digunakan sebagai representasi dari kecenderungan emosi mahasiswa.
2. Jenis gaya belajar mahasiswa berdasarkan model gaya belajar VARK dapat diketahui dengan memberikan kuisioner gaya belajar VARK kepada mahasiswa. Penentuan jenis gaya belajar mahasiswa berdasarkan model gaya belajar VARK tidak sulit dilakukan karena kuisioner menggunakan pertanyaan yang mudah dipahami oleh mahasiswa dan merupakan kegiatan sehari-hari yang biasa dilakukan atau dihadapi oleh mahasiswa.
3. Penelitian ini telah menghasilkan pemetaan gaya belajar mahasiswa dan kecenderungan emosi pada twitter berdasarkan hasil dari klasifikasi gaya belajar VARK dan hasil analisis sentimen pada twitter menggunakan *concept mapping*.
4. Pada penelitian ini diketahui hubungan antara gaya belajar mahasiswa dengan kecenderungan emosi pada twitter. Mahasiswa dengan

kecenderungan emosi positif memiliki hubungan dengan semua jenis gaya belajar. Mahasiswa dengan kecenderungan emosi netral memiliki hubungan dengan *aural*, *read/write* dan *kinaesthetic*. Mahasiswa dengan kecenderungan emosi negatif hanya memiliki hubungan dengan *visual*.

6.2 Saran

Adapun saran dari penelitian ini, antara lain :

1. Pada sistem yang digunakan untuk analisis sentimen sangat terpengaruh oleh kamus kata sentimen yang digunakan, maka untuk penelitian selanjutnya akan lebih baik jika menggunakan kamus kata sentimen dengan jumlah kosakata yang lebih banyak.
2. Pada penelitian selanjutnya, diharapkan dapat menggunakan data responden lebih dari 100 sehingga dapat dilakukan pemetaan yang lebih baik.
3. Penelitian ini dapat dilanjutkan untuk penelitian tentang *personalised adaptable e-learning adaptive systems*.

DAFTAR PUSTAKA

- Arifin, A. Z., Sari, Y. A., Ratnasari, E. K. & Mutrofin, S., 2014. Emotion Detection of Tweets in Indonesian Language using Non-Negative Matrix Factorization. *I.J. Intelligent Systems and Applications*, Volume 09, pp. 54-61.
- Bouckaer, R. R. et al., 2015. *WEKA Manual*. New Zealand: <http://www.cs.waikato.ac.nz>.
- Buntoro, G. A., Adji, T. B. & Purnamasari, A. E., 2014. Sentiment Analysis Twitter dengan Kombinasi Lexicon Based dan Double Propagation. *CITEE 2014*, pp. 39-43.
- Chintala, S., 2012. Sentiment Analysis using neural architectures. *New York University*.
- Dang, Y., Zhang, Y. & Chen, H., 2010. A lexicon-enhanced method for sentiment classification: An experiment on online product reviews. *IEEE Intelligent Systems*, Volume 25, p. 46–53.
- Dunn, R. & Dunn, K., 1978. *Teaching Students through Their Individual Learning Styles: A Practical Approach*. Reston, VA: Reston Publishing Company.
- Fatt, J. P. T., 2000. Understanding the Learning Styles of Students: Implications for. *International Journal of Sociology and Social Policy*, 20(11/12), pp. 31-45.
- Felder, R. M., 2005. Understanding Students Differences. *Journal of Engineering Education*, I(94), pp. 57-72.
- Fleming, N., 1995. [Online] Available at: www.vark-learn.com
- Fogell, J. & Long, R., 1997. *Spotlight on Special Educational Needs: Emotional and Behavioural Difficulties*. Tamworth: NASEN Enterprise.
- G.Vinodhini & RM.Chandrasekaran, 2013. Performance Evaluation of Machine Learning Classifiers in Sentiment Mining. *International Journal of Computer Trends and Technology (IJCTT)*, 4(6), pp. 1783-1786.
- Gardner, H., 1993. *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.
- Go, A., Huang, L. & Bhayani, R., 2009. Twitter sentiment analysis. *Final Projects from CS224N*, Volume 17.
- Haddi, E., Liu, X. & Shi, Y., 2013. The Role of Text Pre-processing in Sentiment Analysis. *Procedia Computer Science*, Volume 17, pp. 26-32.
- Hermawan, A., 2006. *Jaringan Saraf Tiruan Teori dan Aplikasi*. Yogyakarta: Penerbit Andi Yogyakarta.

- Honey, P. & Mumford, A., 1992. *The manual of learning styles*. 3 penyunt. Maidenhead: s.n.
- Kolb, D. A., 1984. *Experiential learning: Experience as the source of learning and development*. s.l.:s.n.
- Mahasneh, A. M., 2013. Learning Styles as a Predictor of Emotional Intellegence Among Sample of Jordanian University Students. *European Journal of Business and Social Sciences*, 2(2), pp. 46-55.
- Mostafa, M., 2013. *More than words: Social networks "text mining for consumer brand sentiments"*. s.l.:s.n.
- Myers, I., McCaulley, M., Quenk, N. & Hammer, L., 1998. *The MBTI Manual: A Guide to the Development and Use of the Myers-Briggs Type Indicator*. Palo Alto: Consulting Psychologists Press.
- Nakamura, J., Ikeda, T., Inui, N. & Kotani, Y., 2003. Learning face marks for natural language dialogue systems. *Proceedings International Conference on Natural Language Processing and Knowledge Engineering, 2003 International Conference on IEEE*, pp. 180-185.
- Novak, J. D. & Canas, A. J., 2008. The Theory Underlying Concept Maps and How to Construct and Use Them.
- Pan, S. et al., 2010. Cross-domain sentiment classification via spectral feature alignment. *International World Wide Web Conference Committee*, pp. 751-760.
- Peter, S. E. & Bacon, E., 2010. Adaptable, personalised e-learning incorporating learning. *Campus-Wide Information Systems*, 27(2), pp. 91-100.
- Plutchik, R., 2001. The nature of emotions. *American Scientist*, pp. 344-350.
- Ravichandran, M. & Kulanthaivel, G., 2014. Twitter Sentiment Mining (TSM) Framework Based Learners Emotional State Classification And Visualization For E-Learning System. *Journal of Theoretical and Applied Information Technology*, 69(1), pp. 84-90.
- Shen, L., Wang, M. & Shen, R., 2009. Affective e-Learning: Using "Emotional" Data to Improve Learning in pervasive learning environment. *Educational Technology & Society*, II(12), pp. 176-189.
- Suliman, W. A., 2010. The Relationship Between Learning Styles, Emotional Social Intelligence, and Academic Success of Undergraduate Nursing Students. *The Journal Of Nursing Research*, 18(2), pp. 136-143.
- Sutojo, T., Mulyanto, E. & Suhartono, V., 2010. *Kecerdasan Buatan*. Yogyakarta: Penerbit Andi Yogyakarta.
- Sylwester, R., 1994. How Emotions Affect Learning. *Educational Leadership*, 52(2), pp. 60-65.

- Taylor, M., Baskett, M., Duffy, S. & Wren, C., 2008. Teaching HE students with emotional and behavioural difficulties. *Education + Training*, 50(3), pp. 231-243.
- Watson, D., Clark, L. A. & Tellegen, A., 1988. Development and Validation of Brief Measures of Positive and Negative Affect : The PANAS Scales. *Journal of Personality and Social Psychology*, 54(6), pp. 1063-1070.
- Witten, I. H. & Frank, E., 2005. *Data mining: Practical machine learning tools and techniques*. 2nd Edition penyunt. San Francisco: Morgan Kaufmann.
- Yamatoto, Y. & Kumatato, T., 2015. Multidimensional sentiment calculation method for Twitter based on emoticons. *International Journal of Pervasive Computing and Communications*, 11(2), pp. 212-232.
- Zapalska, A. & Brozik, D., 2006. Learning styles and Online Education. *Campus-Wide Information Systems*, 23(5), pp. 325-335.

LAMPIRAN

Lampiran 1. Kuisioner data responden dan pengenalan kecenderungan emosi awal Teman-teman mahasiswa, kami sedang melakukan penelitian mengenai kehidupan mahasiswa. Karena itu, kami mohon kesediaan Anda untuk memberikan informasi terhadap beberapa pernyataan di bawah ini. Semua jawaban adalah benar jika sesuai dengan keadaan Anda yang sebenarnya. Mohon diisi dengan sungguh-sungguh. Data ini hanya dipakai untuk bahan penelitian dan akan kami jaga kerahasiaannya.

Terima kasih atas partisipasi Anda dalam penelitian ini.

Peneliti : **Robet Habibi (0856 4319 6617 / WA)**

BAGIAN I : IDENTITAS

Petunjuk : Isilah setiap pernyataan atau pertanyaan berikut sesuai dengan keadaan Anda.

Nama :

Usia :

Jenis Kelamin :

No Hp (dapat dihubungi) :

Status (menikah/belum menikah) :

Fakultas/Jurusan :

Angkatan (tahun masuk Universitas) :

Akun Twitter :

1. Dimanakah Anda tinggal sekarang ?

- a. Di rumah sendiri/orang tua
- b. Di rumah kontrakan
- c. Di kost
- d. Di asrama
- e. Di rumah saudara/anggota keluarga lain
- f. Lainnya :

2. Berapa waktu yang dibutuhkan untuk pergi ke kampus dari tempat tinggal anda?

Jawaban :

3. Apakah warna favorit Anda?

Jawaban :

4. Sejak kapan Anda menggunakan twitter?

Jawaban :

5. Seberapa sering Anda menggunakan twitter untuk memposting status / tweet ?

- a. Sering (lebih dari 1 kali)
- b. Jarang (sekali dalam beberapa hari)
- c. Tidak Pernah
- d. Lainnya :

BAGIAN II

Petunjuk :

Berikut ini terdapat sejumlah pernyataan yang menggambarkan berbagai macam perasaan dan emosi Anda. Bacalah dan berikan nilai pada setiap pernyataan sesuai dengan yang Anda rasakan dalam 1 minggu, dengan nilai berikut :

5 : sangat banyak

4 : cukup banyak

3 : normal

2 : sedikit

1 : sangat sedikit

Emosi	Score	Emosi	Score	Emosi	Score	Emosi	Score
Bahagia		Tersinggung		Putus asa		Murung	
Sedih		Antusias		Tertarik		Percaya diri	
Bergairah		Bersalah		Sendirian		Benci	
Muak		Tenang		Perhatian		Sebel	
Ceria		Dipermalukan		Kesepian		Berarti	
Marah		Energik		Konsentrasi		Gugup	
Lega		Gusar		Ketakutan		Aktif	
Puas		Kuat		Sewot		Bermusuhan	
Tertekan		Semangat		Gelisah		Terinspirasi	
Apatis		Gembira		Tertantang		Waspada	
Berharga		Gemetar		Malas		Takut	
Bangga		Lincah		Tekun		Tegas	
Khawatir		Terhina		Senang		Tidak gentar	
Pantas disalahkan		Marah pada diri sendiri		Tidak puas pada diri sendiri		Muak pada diri sendiri	

BAGIAN III

Petunjuk :

Gunakan skala 1 sampai dengan 5 dibawah ini untuk melihat seberapa besar kepuasan anda terhadap setiap pernyataan. Berikan tanda cek (V) pada kolom angka yang sesuai.

5 : sangat puas

4 : puas

3 : biasa saja

2 : tidak puas

1 : sangat tidak puas

Seberapa puaskah Anda dengan	1	2	3	4	5
Finansial/materi					
Makanan yang dikonsumsi					
Kesehatan					
Tempat tinggal					
Pendidikan					
Pekerjaan					
Situasi kehidupan di kampus					
Akses transportasi ke kampus/parkir kendaraan di kampus					
Hubungan dengan teman-teman kampus					
Hubungan dengan dosen					
Hubungan dengan asisten					
Hubungan dengan orang tua					
Hubungan dengan saudara/keluarga					
Hubungan dengan lawan jenis					
Tugas-tugas akademis di kampus					
Nilai matakuliah					
Keamanan fisik					
Aktualisasi diri dalam aktivitas kampus					
Penggunaan waktu luang					
Mengelola waktu					
Fasilitas/sarana prasarana perkuliahan/praktikum					
Pengetahuan/keterampilan yang diperoleh					
Kemampuan untuk menolong orang lain					
Kehidupan agama/spiritual					
Tidur/istirahat					

Lampiran 2 Kuisioner gaya belajar VARK

The VARK Questionnaire

How Do I Learn Best?

Choose the answer which best explains your preference and circle the letter(s) next to it.

Please circle more than one if a single answer does not match your perception.

Leave blank any question that does not apply.

1. I like websites that have:
 - a. things I can click on and do.
 - b. audio channels for music, chat and discussion.
 - c. interesting information and articles in print.
 - d. interesting design and visual effects.
2. You are not sure whether a word should be spelled 'dependent' or 'dependant'. I would:
 - a. see the words in my mind and choose by how they look.
 - b. hear them in my mind or out loud.
 - c. find them in the dictionary.
 - d. write both words on paper and choose one.
3. You want to plan a surprise party for a friend. I would:
 - a. invite friends and just let it happen.
 - b. imagine the party happening.
 - c. make lists of what to do and what to buy for the party.
 - d. talk about it on the phone or text others.
4. You are going to make something special for your family. I would:
 - a. make something I have made before.
 - b. talk it over with my friends.
 - c. look for ideas and plans in books and magazines.
 - d. find written instructions to make it.
5. You have been selected as a tutor or a leader for a holiday program. This is interesting for your friends. I would:
 - a. describe the activities I will be doing in the program.
 - b. show them the map of where it will be held and photos about it.
 - c. start practising the activities I will be doing in the program.
 - d. show them the list of activities in the program.

6. You are about to buy a new digital camera or mobile phone. Other than price, what would most influence your decision?
 - a. trying it.
 - b. reading the details about its features.
 - c. it is the latest design and looks good.
 - d. the salesperson telling me about it.
7. Remember when you learned how to play a new computer or board game. I learned best by:
 - a. watching others do it first.
 - b. listening to somebody explaining it and asking questions.
 - c. clues from the diagrams in the instructions.
 - d. reading the instructions.
8. After reading a play you need to do a project. Would you prefer to:?
 - a. write about the play.
 - b. act out a scene from the play.
 - c. draw or sketch something that happened in the play.
 - d. read a speech from the play.
9. You are about to hook up your parent's new computer. I would:
 - a. read the instructions that came with it.
 - b. phone, text or email a friend and ask how to do it.
 - c. unpack the box and start putting the pieces together.
 - d. follow the diagrams that show how it is done.
10. You need to give directions to go to a house nearby. I would:
 - a. walk with them.
 - b. draw a map on a piece of paper or get a map online.
 - c. write down the directions as a list.
 - d. tell them the directions.
11. You have a problem with your knee. Would you prefer that the doctor:
 - a. showed you a diagram of what was wrong.
 - b. gave you an article or brochure that explained knee injuries.
 - c. described to you what was wrong.
 - d. demonstrated what was wrong using a model of a knee.
12. A new movie has arrived in town. What would most influence your decision to go (or not go)?

- a. you hear friends talking about it.
 - b. you read what others say about it online or in a magazine.
 - c. you see a preview of it.
 - d. it is similar to others you have liked.
13. Do you prefer a teacher who likes to use:
- a. demonstrations, models or practical sessions.
 - b. class discussions, online discussion, online chat and guest speakers.
 - c. a textbook and plenty of handouts.
 - d. an overview diagram, charts, labelled diagrams and maps.
14. You are learning to take photos with your new digital camera or mobile phone. I would like to have:
- a. examples of good and poor photos and how to improve them.
 - b. clear written instructions with lists and bullet points.
 - c. a chance to ask questions and talk about the camera's features.
 - d. diagrams showing the camera and how to use it.
15. You want some feedback about an event, competition or test. I would like to have feedback:
- a. that used examples of what I have done.
 - b. from somebody who discussed it with me.
 - c. that used a written description or table of my results.
 - d. that used graphs showing what I achieved.
16. You have to present your ideas to your class. I would:
- a. make diagrams or get graphs to help explain my ideas.
 - b. write a few key words and practice what to say again and again.
 - c. write out my speech and learn it by reading it again and again.
 - d. gather examples and stories to make it real and practical.

The VARK Questionnaire Scoring Chart

Use the following scoring chart to find the VARK category that each of your answers corresponds to. Circle the letters that correspond to your answers

e.g. If you answered b and c for question 3, circle V and R in the question 3 row.

Question	a category	b category	c category	d category
3	K	V	R	A

Scoring Chart

Question	a category	b category	c category	d category
1	K	A	R	V
2	V	A	R	K
3	K	V	R	A
4	K	A	V	R
5	A	V	K	R
6	K	R	V	A
7	K	A	V	R
8	R	K	A	V
9	R	A	K	V
10	K	V	R	A
11	V	R	A	K
12	A	R	V	K
13	K	A	R	V
14	K	R	A	V
15	K	A	R	V
16	V	A	R	K

Calculating your scores

Count the number of each of the VARK letters you have circled to get your score for each VARK category.

Total number of Vs circled =

Total number of As circled =

Total number of Rs circled =

Total number of Ks circled =

Calculating your preferences

Use the VARK spreadsheet (which can be purchased from the www.vark-learn.com website) to work out your VARK learning preferences.