Trainee Teachers' Critical Thinking in an Online Discussion Forum: A Content Analysis

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ABSTRACT

Purpose – The application of asynchronous mode of computer-mediated communication such as the online discussion forum is becoming more prevalent in our learning environment. Online forum is important for learning to take place as it allows the creation of a "virtual community of inquiry" that encourages problem solving, critical thinking, and knowledge construction. Thus, this study sought to analyse the content of trainee teachers' discussion in an online forum, especially in terms of their critical thinking levels. An online discussion forum was created for the trainee teachers to discuss their experience and problems encountered during the teaching practicum.

Method – A total of 30 Universiti Sains Malaysia pre-service teachers who underwent 20 weeks of teaching practice in secondary schools were involved in this study. The Newman, Webb and Cochrane (1995) framework was used to analyse the students' levels of critical thinking skills as indicated in their messages or reflections. The depth of the their critical thinking in terms of relevance, importance, novelty, accuracy, linking ideas or interpretation, justification, critical assessment, and practical utility were of interest in this study.

Findings – Throughout the 20 weeks of teaching practice, a total of 896 positive critical thinking indicators were recorded from the participants' discussion. Their reflections focused mainly on the aspects of relevance, importance, and justification of the issues being discussed. However, the trainees hardly tried to bring outside knowledge or experience to address problems, and their input barely reflected their width of understanding in discussing the issues. The online discussion forum, nevertheless, has provided a platform for the trainees to share and reflect their problems during the teaching practicum session.

Value – The paper explores the potential of an online discussion forum to be applied during teacher practice session. Based on these findings, it is recommended that our teacher training institutions integrate this technology into their curriculum.

Keywords: online discussion forum, critical thinking, teacher training

INTRODUCTION

The advancement of ICT can be seen in many sectors, including education. As a matter of fact, the Malaysian Ministry of Education has outlined three policies pertaining to the use of ICT (Chan, 2002). The first policy – ICT for all students, is to reduce the digital divide between the schools. The second policy emphasises the role and function of ICT as a teaching and learning tool, either being used as part of a subject or as a subject by itself. The third policy emphasises the use of ICT to increase productivity, efficiency and effectiveness for school and classroom management. As a teaching and learning tool, ICT can be used either in one specific or interdisciplinary subject. It is a subject by itself, for instance, 2D animation or desktop publishing, or it can be used as a trans-disciplinary subject such as the use of ICT in mathematics, biology, social sciences, arts, humanities, language, etc. Thanks to web technology, ICT allows learning to take place from anywhere and at anytime.

The education sector will benefit more with the advent of web 2.0 that emphasises a more interactive and user-friendly environment, and allows for social collaboration. Social networking sites, online forums, blogs, wikis, and video sharing sites, are examples of web 2.0 technology that facilitate information sharing and collaboration on the web. Students will be able to communicate and interact not only with their peers, but also with their instructors or even experts from other institutions. Online discussion forum, for instance, is one such avenue for this collaboration and learning-from-others concept to be materialised. Collaborative learning allows the group members to work together to solve a given problem or achieve the learning goal. Interaction among the group members is essential in collaborative learning, and online discussion forum allows such interaction to happen.

Students' performance is usually gauged through some form of objective assessment. Multiple-choice-question, true/false, or essay tests are instances of these objective assessments.

Nevertheless, students' learning not only can be measured in terms of how well they can achieve the learning objectives or outcomes, but also in terms of the learning process that they experience. Critical thinking skill, for example, can be developed through interactions with the instructors, experts and peers during the learning process. A student's reflection in an online forum, for instance, may indicate a certain level of his or her critical thinking skill.

Critical thinking is defined as "the intellectually disciplined process of actively and skilfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action" (Schriven & Paul, n.d.). As the Internet is offering us with a huge amount of information and at an unimaginable rate, the problems and possibilities that this technology is imposing on our knowledge and skills are imaginable. Thus, critical thinking skills are required to actively conceptualise, apply, analyse, synthesise or evaluate the huge amount of information offered by the Internet. Online learning through electronic forum or online discussion is one platform that allows the learner to apply their critical thinking skills.

Problem Statement

We have to accept the fact that many educators are still practising the teacher-centred approach in delivering their instruction. This one-way of communication between the instructor and the students should no longer be the main practice as it will only create passive learners. Instead, more student-centred activities such as cooperative and collaborative learning, discussion, role play, dramatisation, etc. need to be introduced. Through such approaches, more student-student interaction is expected, and thus, a more active learning environment is fostered. An online forum is seen as an effective platform for the instructor to develop and enhance reflective and critical thinking among his students as it allows them to discuss, debate, and exchange ideas in an electronic environment (MacKnight, 2000).

In addition, there are some constraints concerning the student-centred activities, for example, limited face-to-face classroom time as well as the huge number of students present in the classroom. These factors will limit the students' participation and contribution, and in the long run, will affect their learning process. Asynchronous

online forum has the potential to improve the students' participation as the discussion can be done at anytime and outside the classroom setting. Also, the content of the discussion will be stored digitally for learning assessment purposes. Unlike traditional face-to-face sessions, e-forum also allows the participants to interact without having the fear and anxiety to participate and contribute in on online environment. It also allows more time for them to reflect and think before writing and posting their messages electronically.

Several researchers have reported the problems faced by trainee teachers during their teaching practice. As they do not have teaching experience prior to attending the practicum session, most of them have difficulty to teach and improve their teaching (Kasa, Asmirin, Jamian & Othman, 2001). In addition, their pedagogical readiness is not at the satisfactory level (Kassim, Kamaruddin, Ali, Abu & Osman, 1994), and they do not have the self-confidence in delivering the content (Hashim Othman & Hamzah, 2001). Their level of interest, attitude, knowledge and teaching skills are reported to be only at the moderate level (Abu, 2006). As these trainee teachers are away from the campus and not able to meet their peers and faculty members to discuss the problems encountered during the practicum session, e-forum is an option.

In this study, an electronic forum (e-forum) will be used to monitor the students' critical thinking skills. Unlike face-to-face interaction sessions, online e-forum has no physical and time boundaries. The e-forum will be used as a discussion platform to assess the students' ability to discuss and interact during their 20 weeks of teaching practice. Through e-forum, it is expected that the students as well as other participants (including the practicum supervisors, and course coordinators) generate a sense of belonging, sharing, and communicating with each other. The trainee teachers will also be able to reflect their teaching practice, experiences, and problems that they might encounter during the practicum session.

Research Questions and Purposes

The purpose of this study was to investigate whether an online forum discussion is able to uncover the participants' critical thinking skills as indicated in their messages. Thus, the study intended to seek the answer for the following questions:

1. Are there any positive or negative critical thinking indicators that exist in the students' online discussion pertaining to their teaching practice experience?

2.   What are the dominant critical thinking indicators exhibited in the online students' discussion?

Significance of the Study

Through this study, it is hoped that e-forum will provide an alternative platform for the trainee teachers to participate in an online environment. As the trainees are stationed at several different schools in the state, the online forum allows them to discuss and share ideas, problems, and experiences they encounter during the teaching practice session. In addition, since e-forum has never been applied to previous groups of trainees, it is seen as a novel approach for the teacher trainees to reflect on their teaching practice. Moreover, as e-forum provides a platform for the trainees to collaborate and interact with each other in an online environment, it is important for such practice to be extended to all teacher training institutions in Malaysia.

LITERATURE REVIEW

Collaborative learning is a learning approach that focuses on student interaction in which they work together to solve a given problem, to enrich ideas, to generate the sharing of knowledge and information, or to complete a given task. Usually, interaction involves discussion, dialog, debate, and information sharing activities among group members. Through such activities, the participants are expected to be actively involved in the learning process and generate the relevant knowledge.

The concept of collaborative learning in pairs and group of students with shared goals and values has been practised in higher education since early 1990s (MacKnight, 2000). Proponents of collaborative learning claim that the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking (Gokhale, 1995). Online discussion or electronic forum is one such platform that allows collaborative learning, and it is especially vital for ill-structured programmes or courses at post-secondary level. It complements the more traditional, face-to-face collaborative learning session in that the participants can collaborate at anytime and from anywhere as long as they are able to access the Internet.

Online discussion is a powerful tool for engaging students in dialogues with each other as well as with the larger society. With the rapid advancement of learning management systems – such as WebCT, Blackboard, and of late, MOODLE – more schools, colleges, and universities are using these online tools for teaching and learning purposes. It not only allows the learners to participate in any topic or issue but it can also be used by the instructor to gauge the students' reflective writing. One can observe and measure the input written by each participant, and an analysis can be carried out to analyse the content or reflective writing put forth by the participants.

Critical thinking is usually seen as a dynamic activity involving several skills such as observation, evaluation, and judgement. It emphasises one's ability to analyse and evaluate information in order to better understand the idea or problem at hand. It is also refers to one type of reflective thinking (Yahya, Subuh, Zurihani & Yahya, 2005). Schafersman (1991) documented that the purpose of teaching critical thinking skills is to improve the thinking skills of students and thus better prepare them to survive and succeed in the world. Thus, in this new paradigm of education, students should learn to ask appropriate questions, gather relevant information, efficiently and creatively sort out and sieve through this information, reason logically from this information, and come to reliable and trustworthy conclusions.

Some researchers have speculated that there may be a relationship between the use of online forums and the development of critical thinking skills. It is hypothesised that online discussion provides a social context for learning that gives the learners time to think about their contributions and organise their thoughts prior to responding (Landis, Swaine, Friehe, & Coufal, 2007). Ngah (1994) found that online interactions allow graduate students to reflect their thoughts and writings. Meanwhile, Ou, Ledoux, and Crooks (2004) reported that the presence of the instructor during online discussion has a positive impact on the students' evaluation and analysis of ideas, but not on their connection of ideas. Also, according to Greenlaw and DeLoach (2003), the wording of a discussion topic can affect the students' levels of critical thinking.

Newman, Webb, and Cochrane (1995) suggested the need to look for indicators of critical thinking in a social context, including online learning. According to them, critical thinking is not just limited to the one-off assessment of a statement for its correctness, rather, it is a dynamic activity in which critical perspectives on a problem develop through both individual analyses and social

interaction. Their conceptual framework was based on Garrison's (1992) description of critical thinking as the construction of meaning through internal reflection by the individual and the sharing of personal constructs, thereby establishing a *cognitive presence* in the discussion. Newman et al. (1995) had suggested several critical thinking indicators (Table 1), namely relevance, importance, novelty, bringing outside knowledge or experience, ambiguities, linking ideas, interpretation, justification, critical assessment, practical utility, and width of understanding.

RESEARCH METHODOLOGY

This quantitative study employed a descriptive design. It involved 30 pre-service teachers from the School of Educational Studies, Universiti Sains Malaysia who underwent a 20-week teaching practice in several secondary schools in Penang. They were enrolled in a four-year Bachelor of Education (majoring in Interactive Multimedia) programme. The students had to spend their final semester attending the teaching practice, in which everyone was assigned with a faculty member as his or her supervisor.

During the teaching practice, the trainees communicated with each other and with the supervisors via an electronic discussion forum prepared by the teaching practice course coordinator. This forum was housed in a MOODLE learning management system created by the Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia, USM. The topic identified for discussion was pertaining to their teaching practice experiences, problems, and issues that they encountered during the practicum session. Another topic chosen for their discussion was concerning the formative evaluation of the instructional materials that they have developed to be used and tested in their classroom sessions. The students had to share their problems, reflections or personal experiences pertaining to their teaching practice, and formative evaluation session. These pre-service teachers never had any teaching experience, thus, this forum was vital for them to share their problems and experiences during the practicum. In addition, since there was no face-to-face meeting with the course supervisor during the teaching practice session, the trainee teachers relied solely on this e-forum platform to communicate and collaborate with their peers and supervisor. All 11 faculty members of the Centre for Instructional Technology and Multimedia, USM who were appointed as the trainees' teaching practice supervisors were also invited to participate in this forum.

A content analysis was used to analyse the students' inputs and reflections on the given topic in the e-forum. Each student was required to go online and submit his or her reflection at least twice a week. Then, their messages, inputs, or reflections were analysed to assess their critical thinking levels. This was done by analysing the students' inputs/reflections and identifying the critical thinking indicators or categories present in them. The Newman et al. (1995) critical thinking skill instrument was used in this study. This instrument was chosen as it involves the identification of several different critical thinking indicators or attributes that can be recognised simultaneously from the same student's remarks. In addition, this instrument is said to have face and construct validity and it is based on theories that are commonly accepted in literature (Landis et al., 2007). Moreover, this instrument is less difficult to apply as the codes or indicators are much more explicitly defined and there is little ambiguity between the indicators. The quantitative and qualitative coding and analysis of the participants' transcript content were done manually by the second author, and rechecked by the first author. Coding was done at the sentence level with multiple codes being used for sentences that contained more than one category.

RESULTS AND DISCUSSION

Throughout the 20 weeks of teaching practice, a total of 896 positive critical thinking messages, inputs or reflections were recorded from the 30 participants (Table 2); which was an average of 29 postings contributed by each participant. From the weekly perspective, an average of 1.5 postings was submitted by each participant in every week.

In terms of weekly postings, the highest number of messages recorded was in week 3 & 4, with 287 postings made by the participants. This was followed by week 5 & 6, with 201 messages, week 1&2 (165 messages), and week 15 & 16 (113 messages). Week 7 & 8, week 9 & 10, week 11 & 12, week 13 & 14 all recorded less than 40 postings, with 34, 32, 37, and 27 messages respectively. The last four weeks (week 17 & 18, and week 19 & 20) did not record any messages from the participants. In addition, it was very obvious that the majority of the students' postings or inputs can be seen in the first six weeks of the teaching practice, whereas in the last four weeks, the students' reflection or inputs were no longer present.

From the analysis, it was noted that the major bulk of the messages indicate the *relevance* indicator (161 postings or 18.0%). The second most dominant indicator is the *justification* (152 messages or 17.0%), followed by the *importance* (122 messages or 13.6%), and *novelty* indicators (115 postings or 12.8%). The other six least reported indicators were *critical assessment* (8 inputs or 8.9%), *ambiguity and clarity/confusion* (63 inputs or 7%), *bringing outside knowledge* (58 messages or 6.5%), *practical utility* (53 messages or 5.9%), *linking ideas* (48 messages or 5.4%), and *width of understanding* (44 or 4.9%).

Also, from the analysis, it was found that the relevance (R+), justifications (J+), and importance (I+) were the most frequent indicators that exist in the students' inputs or reflections. It was found that the students are well-focused in the discussion pertaining to the topic assigned to them in the e-forum, and they made sure that whatever they wrote was relevant to the forum topic (relevance). They also provide evidence or examples in their inputs and justified their solutions or judgments (justification). The trainees had also written some important points or issues in their inputs pertaining to the topic at hand (importance). Some examples of the students' messages are shown in Table 3.

Since the trainees were novice teachers, their lack of teaching experience was obviously seen in their messages. They were not able to assess their peer's messages critically (only 8.9% messages), and were not able to bring outside knowledge in discussing the issue at hand (6.5%). In addition, their messages lacked the width of understanding on the problems or issues raised by their peers (4.9%). These findings support the previous studies concerning the difficulties faced by teacher trainees in delivering their teaching (Kasa et al., 2001; Kassim et al., 1994) as well as their inability to critically reflect and assess the issues at hand (Toh, 2001; Meyer, 2003; Chung, 2005).

Meanwhile, throughout the 20 weeks of teaching practice, there were 174 non-critical thinking indicators inputs (Table 4) posted by the participants in the online discussion, with an average of only 8.7 inputs per week. Also, an average of only 5.8 non-critical inputs was posted by each student in the 20 week treatment, and an average of 0.29 input posted by each student in every week. This indicates that less non-critical inputs were posted by the participants throughout the 20 week forum.

As shown in Table 4, it was found that importance (47 postings or 27.05%), relevance (45 or 25.9%), and width of

understanding (28 or 16.1%) were the three most frequent negative critical thinking indicators observed in the forum. Examples of such negative indicators are shown in Table 5. In the first statement, the information posted by the student is not relevant to the topic identified in the forum. The second statement, indicate an uncritical acceptance or unreasoned rejection, or repeat of information without making inferences or offering an interpretation. In the third case, the student's discussion is shallow and without a goal, while, in the fourth example, the input is not relevant to the given topic. Thus, these inputs or postings were considered as negative critical thinking indicators for the topic identified in the online discussion.

CONCLUSION

Critical thinking is an important aspect in any learning process which can be achieved through collaborative learning. Online discussion is a useful platform for collaborative learning as well as to gauge their critical thinking skills through the posted messages. In this study, relevance, justification, and importance are the three Newman et al. (1995) major critical thinking indicators identified in the trainees' messages or inputs. On the other hand, two indicators hardly found in those messages were critical reflection and width of understanding on the problems. The online discussion, nevertheless, provided a platform for the teacher trainees to share and reflect their problems during teaching practice session.

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Table 1

Critical Thinking Indicators (from Newman et al., 1995)

	CATEGORY		POSITIVE INDICATOR		NEGATIVE INDICATOR
R	Relevance	R+	Relevant statements	R-	Irrelevant statements, diversions
I	Importance	I+	Important points, issues	I-	Unimportant, trivial points or issues
N	Novelty: new info, ideas, solutions	NP+	New problem-related information	NP-	Repeating what has been said
		NI+	New ideas for discussion	NI-	False or trivial leads
		NS+	New solutions to problem	NS-	Accepting first offered solution
		NQ+	Welcoming new ideas	NQ-	Squashing, putting down new ideas
		NL+	Learner brings new things in	NL-	Dragged in by tutor
O	Bringing outside knowl-edge or experi-ence to bear on problem	OE+	Drawing on personal experience	OQ-	Squashing attempts to bring in outside knowledge
		OC+	Refer to course material	O-	Sticking to prejudice or assumptions
		OM+	Use relevant outside material		
		OK+	Using previous knowledge		
		OP+	Course related problems brought in (e.g.; students identify problems from lecturers and texts) Welcoming outside		
		OQ+	knowledge		
A	Ambiguities: Clarified or confused	AC+	Clear, unambiguous statements	AC-	Confused statements
		A+	Clear up ambiguities	A-	Continue to ignore ambiguities
L	Linking ideas, interpretation	L+	Linking facts, ideas and notions	L-	Repeating information without making inferences or offering an interpretation
		L+	Generating new data from information collected	L-	Stating that one shares the ideas or opinions stated, without taking these further or adding any personal comments
J	Justification	JP+	Providing proof or examples	JP-	Irrelevant or obscuring questions or examples
		JS+	Justifying solutions or judgments	JS-	Offering judgments or solutions without explanations or justifications
		JS+	Discussing advantages and disadvantages of solution	JS-	Offering several solutions without suggesting which is the most appropriate
C	Critical assess-ment	C+	Critical assessment or evaluation of own r others' contributions	C-	Uncritical acceptance or unreasoned rejection
		CT+	Tutor prompts for critical evaluation	CT-	Tutor uncritically accepts
P	Practical utility (grounding)	P+	Relate possible solutions to familiar situations	P-	Discuss in a vacuum
		P+	Discuss practical utility of new ideas	P-	Suggest impractical solutions
W	Width of understanding (complete picture)	W+	Widen discussion (problem within a larger perspective. Intervention strategies within a wider framework)	W-	Narrow discussion (address bits of fragments of situation. Suggest glib, partial interventions)

Table 2

Weekly Presence of Critical Thinking Indicators by Percentage and Frequency

Week Indicator	1&2	3&4	5&6	7&8	9&10	11&12	13&14	15&16	17&18	19&20	Total
R+	48 (29.1)	39 (13.6)	36 (17.9)	8 (23.5)	5 (15.6)	5 (13.5)	5 (18.5)	15 (13.3)	0	0	161 (18.0)
I+	30 (18.2)	31 (10.8)	28 (13.9)	7 (20.6)	4 (12.5)	3 (8.1)	3 (11.1)	16 (14.2)	0	0	122 (13.6)
N+	14 (8.5)	41 (14.3)	26 (12.9)	4 (11.8)	3 (9.4)	8 (21.6)	2 (7.4)	17 (15.0)	0	0	115 (12.8)
O+	4 (2.4)	28 (9.8)	15 (7.6)	2 (5.9)	1 (3.1)	0	0	8 (7.1)	0	0	58 (6.5)
A+	14 (8.5)	20 (7.0)	12 (6.0)	1 (2.9)	2 (6.3)	2 (5.4)	0	12 (10.6)	0	0	63 (7.0)
L+	4 (2.4)	13 (4.5)	12 (6.0)	0	2 (6.3)	3 (8.1)	3 (11.1)	11 (9.7)	0	0	48 (5.4)
J+	28 (17.0)	47 (16.4)	40 (19.9)	5 (14.7)	4 (12.5)	6 (16.2)	5 (18.5)	17 (15.0)	0	0	152 (17.0)
C+	10 (6.1)	28 (9.8)	15 (7.6)	5 (14.7)	6 (18.8)	4 (10.8)	4 (14.8)	8 (7.1)	0	0	80 (8.9)
P+	11 (6.7)	19 (6.6)	10 (5.0)	2 (5.9)	3 (9.4)	2 (5.4)	3 (11.1)	3 (2.7)	0	0	53 (5.9)
W+	2 (1.2)	21 (7.3)	7 (3.5)	0	2 (6.3)	4 (10.8)	2 (7.4)	6 (5.3)	0	0	44 (4.9)
Total	**165**	**287**	**201**	**34**	**32**	**37**	**27**	**113**	**0**	**0**	**896**

Table 3

Examples of Students' Reflections and the Respective Positive Critical Thinking Indicator

Original posting	Translated version	Indicator
"…..tensen wei ngajar td..bdk2 xnak belajar…".	*"..it was so tensed teaching just now…the kids do not want to learn.."*	<R+>,< I+>
"memang mengajar menguji kesabaran saya"	*"it really tests my patience"*	<R+>, <I+>
"sy handle budak2 yang kemampuan bahsa inggerisnya amat lemah even daripada kelas 1.bayangkan perkataan simple pun diorang x paham…".	*"i am handling a group of students with a very limited English competency. They can't even understand simple words…"*	<R+>, <I+>
"hari nie…masuk hari kedua aku ambil kelas sejarah tok form 1 n 4.macam2 perasaan ada… berdebar-debar".	*'today…the second day I teach History lesson classes for Form 1 and 4. I have mixed feelings about it…*	<R+>, <I+>
"tips untuk kawan-kawan: mula2 masuk kena buat garang dulu, kalu mula2 masuk dah gelak2 nanti xdpt respect budak. Ni cikgu sendiri yang bagitau. First impression paling penting…"	*"tips for my friends: when you enter your first class, you have to look fierce or stern, if you start your first class with laughter, you will not get the students' respect. This info is from the teachers. The first impression is important…"*	<P+>, <W+>
"sy pun sama.susah nak control time experiment"	*"i am also having problem controlling the class during the lab experiment"*	<R+>
"cek email masing-masing or cek pada new topic.. ada dinyatakan due date sebenar penyerahan laporan praktikum.. "	*"please check your email, or check the new topic….there is an announcement concerning the submission date of our practicum report.."*	<A+>, <L+>, <J+>, <C+>
"due date antar report bergantung kepada pensyarah penyelia masing-masing.. tapi klu diikutkan handout perancangan kursus kena submit minggu last..minggu 15...pendek kata report kena antar sebelum habis LM.."	*"the due date to submit the report depends on the respective supervisors. But based on the course outline handout, it has to be submitted on Week 15. In short, the report has to be in before the teaching practice ends"*	<O+>, <A+>, <L+>, <J+>, <C+>
"…dia orang ini bnyk yg confuse ngn negative n positive, pastu utk solving problem, diorang tak tau nak kena tambah ngan no negative atau tolak trus..penat gl dok menerangkan bnd tu"	*"…these students are confused with the positive and negative numbers. Then, for problem solving, they do not know whether to add the negative numbers or to deduct them directly…I am so exhausted explaining this…"*	<N+>

Table 4

Weekly Presence of Non-critical Thinking Indicators by Percentage and Frequency

Week Indicator	W1/2	W3/4	W5/6	W7/8	W9/10	W11/12	W13/14	W15/16	W17/18	W19/20	Total (%)
R-	5	13	8	2	3	3	2	8	1	0	45 (25.9)
I-	6	12	11	2	3	3	3	6	1	0	47 (27.0)
N-	4	7	2	0	1	2	2	0	0	0	18 (10.3)
O-	1	2	1	0	0	0	0	0	0	0	4 (2.3)
A-	1	0	0	0	0	1	0	0	0	0	2 (1.1)
L-	0	4	0	0	0	0	0	0	0	0	4 (2.3)
J-	0	5	0	0	0	0	0	0	0	0	5 (2.9)
C-	0	4	0	0	0	0	0	0	0	0	4 (2.3)
P-	0	7	0	0	1	3	1	5	0	0	17 (9.8)
W-	0	15	1	0	1	4	2	4	1	0	28 (16.1)
TOTAL **(%)**	17 (9.8)	69 (39.7)	23 (13.2)	4 (2.3)	9 (5.2)	16 (9.2)	10 (5.7)	23 (13.2)	3 (1.7)	0 0	174

Table 5

Examples of Students' Reflections and the Respective Negative Critical Thinking Indicator

Original posting	Translated version	indicator
"…ni ada maklumat dari kpmiusm"	*"…here is information from our kpmiusm club…"*	*<R->,<I->*
"..adat la ain budak2 nakal macam kita juga dulu.."	*"…they are kids, just like us before"*	*<L->,<C->*
"…lakarkan pengalaman dan kenangan kat sekolah sebaik mungkin..kita tinggal sebulan jer lagi di sini…lepas ni entah la jumpa lagi…"	*"..sketch your experience and memory in that school as best as you can…we only have one month left here…we will never know when to meet again"*	*<P->,<W->*
"weh…dgr ni satu cerita… cerita jln msjid negeri namanyee.."	*"hey…listen to this story…a story about Jalan Masjid Negeri…"*	*<R->,<I->*