Using content-based humorous cartoons in learning materials to improve students’ reading rate, comprehension and motivation: It is a wrong technique?

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Abstract

Can content-based humorous cartoons be integrated in texts in teaching and learning materials to improve students’ reading rate, comprehension and motivation? Previous studies have reported inconsistent results. To identify the effects of content-based humorous cartoons in reading materials, a between-subjects repeated-measures experimental study and a follow-up survey study were conducted. The majority of the students opined that the illustrations had positive impacts on their reading. Results of the experimental study indicate that the illustrations had significantly increased rate, comprehension and motivation of the students. The findings provide supportive evidences for the Dual Coding Theory and Relief Theory of Laughter.

1. Introduction

A recent survey study has shown that student teachers in teaching colleges seldom read course materials (examples: course notes, modules, and handouts) provided during and after the attending teacher professional development courses and workshops. Chua, Tan, Lim & Jeswant (2007) reported that only nearly 24 percent read the course materials. More than half said they had read only less than 10 percent of the materials, and an additional 20 percent said they had read nothing. Teaching is less effective if students do not read the teaching and learning materials provided by the instructor because there are only two practical ways to get knowledge in words into the human brain: through the ear and through the eye. Therefore, besides listening to lectures, an effective way for students to learn new knowledge is through the eyes, that is, by reading (Trelease, 2007). Reading course materials is particular...
important to professional development courses or workshops participants because it helps the participants to understand the contents in details.

Chua et al. (2007) reported that most of the materials were printed in formal plain texts, and did not have the element of “reading is fun”. The discovered that besides factors related to time, a main reason was the materials are hard to understand and failed to stimulate teachers’ motivation to read them when they were free. From this perspective, they suggested that psychological elements and pedagogical technology should be introduced in developing professional development course materials to stimulate intrinsic motivation, self-efficacy and the willingness of participants to read the materials. Hence, this study examined the effects of integrating a kind of illustrations, that is, content-based humorous cartoon into course materials on reading rate, reading comprehension and reading motivation of a group of student teachers who were attending a teacher professional development course.

2. The issue: can content-based illustrations enhance students’ reading rate, comprehension and motivation?

Illustration in this study was defined as visual or pictorial figures inserted into reading texts to enhance reading. Levie & Lentz (1982) have claimed that illustrations in reading materials have five major functions: (1) Representation: to repeat the text’s content; (2) Organization: to enhance the text's coherence; (3) Interpretation: to provide the reader with more concrete information; (4) Transformation: to target critical information in the text and recode them in a more memorable form; and (5) Decoration: for aesthetic properties or to spark reader's interest in the text, and content-based illustration delivers all the above functions.

Can content-based illustrations enhance students’ reading? Some researchers argued that content-based illustrations have a positive effect on reading because reading comprehension largely depends on the quality of the repetition effect. For example, Gyselinck & Tardieu (1999) argued that when the information from the text and from the illustration is well integrated, they "[act] as if the information was presented twice, thus enhancing performance" (p. 211). However, Liu (2004) conducted a study to examine the effect of comic strips (a series of humorous cartoons) on reading comprehension. The researcher reported that low-level proficiency secondary school students apparently did not need the illustrations to support reading simpler texts, and higher-level proficiency students likewise did not need the illustrations to support the more difficult text versions, and the illustrations were ineffective because students might have shifted their attention from the text to the accompanying comic strips when they realised that they did not fully comprehend the text. The findings were consistent with the finding of Khoii & Forouzesh (2010) that using reading passages with comic strips does not have any significant effect on the learners’ progress in reading comprehension.

Besides that, Bryant, Comisky, Crane & Zillmann (1980) reported that humorous illustrations or pictures in textbooks have little effect on comprehension but have a negative impact on students’ acceptance of the plausibility of the text, even though such illustration adds to a text's appeal. Some researchers explained the small or negative effect of humorous illustrations in texts by referring to the Cognitive Transformation Theory. For example, Kane, Suls & Tedeschi (1977) argued that humorous elements in illustrations signal to readers that the seriousness of the messages in the material they are reading should be downplayed. As a result, a cognitive transformation occurs, rendering the messages as less critical and less important. Therefore, it is difficult for the reader to make a connection between the messages of the text and his personal reading intention. The level of personal reading intention associated with the reading material is diminished. The cognitive transformation lessens reading comprehension and it indirectly redirects the focus of reading to the illustration and humour element.

However, other researchers have claimed that content-based illustrations have positive effects on reading comprehension. For example, Chik (2005) conducted an experimental study on the effect of the
use humorous illustrations in English learning materials (humour was integrated into textbook) in Hong Kong elementary schools on students’ reading motivation. Results of the study showed that the materials were statistically related to changes in students’ intrinsic and extrinsic motivation in reading and were positively linked to student reading outcomes. The researcher reported that students who were intrinsically motivated were completely involved with the reading process, enjoying the reading experience and reading with excellent cognitive proficiency.

Some researchers explained the effects of humorous illustrations on reading from the perspective of the Relief Theory of Laughter (Meyer, 2006), which originated from Freud’s theory. The theory states that humour releases emotional energy and tension. It acts as a positive motivation towards the reading process and enhances reading intention, and in turn increases reading rate. Hence, humorous illustration neutralises the boredom of students when they are reading highly structured academic materials and positively affects reading rate, comprehension and motivation (Berk & Popham, 1995). Other researchers explained the effect of visual illustrations on reading based on the Dual Coding Theory (Khoii & Forouzesh, 2010; Sadoski & Paivio, 2001). According to the theory, the human cognition consists of two subsystems that process information simultaneously. The verbal subsystem processes text information (words, sentences) while the imagery subsystem processes visual and pictorial information. The connections and interrelations of the two subsystems when a reader read text with visual illustration allow the dual coding of the information. The interconnectedness of the two systems permits cueing from one system to the other, which, in turn, facilitates the interpretation of information, and thus improves reading.

The inconsistent findings and theories on the effect of illustrations on reading indicate that the value of content-based humorous illustrations in reading academic texts is far from conclusion. It offers an area where much more research can still be done. Previous research has not directly investigated the effectiveness of content-based humorous cartoons on reading rate, reading comprehension and reading motivation in reading materials (Berk & Popham, 1995). This is of great importance since the number and type of illustrations in school textbooks keeps growing (Dienstbier, 1995).

3. Objectives of the study

This study was conducted to examine the effects of integrating content-based humorous cartoons into course materials on reading rate, comprehension and motivation of a group of student teachers who were attending a teacher professional development course. The study has two phases. Firstly, an experimental study was conducted to examine the effects of the content-based humorous cartoons on reading rate, comprehension and motivation of the participants of the course. Secondly, a follow-up survey study was conducted on the participants in the experimental group to identify their opinions on effectiveness of the illustrations on their reading.

4. Research design for the experimental study

The experimental study was conducted to examine the effects of the content-based humorous cartoons on reading comprehension and reading motivation. A between subjects pre-test and post-test experimental design was employed. A control group received a text-only version of the course material and a treatment group received a text with content-based humorous cartoons version for reading during the course. The two groups were measured (pre-tests and post-tests) for reading amount, comprehension and reading motivation.

4.1. Participants

Participants were 80 student teachers: 34 males (42.50%) and 46 females (57.50%) with an average age of 20.2 years. The participants were selected from a teacher training institute in Malaysia. Participants
have the same educational history and background. They received the same educational training under the
graduate teacher preparation programme. They passed the selection test and interview for their affective
(personality, attitude, emotion, motivation and other aspects), cognitive (analytic and quantitative skills)
and communication skills (verbal, written and reading). The participants were attending a three sessions’
teacher professional development course, named “Survey Research in Educational Studies”, the course
was conducted for three consecutive days (each day three hours). Before the course started, they were
assigned randomly into a control group (n=40) and a treatment group (n=40) by a simple random
sampling procedure. The two groups attended the same course in two separate course rooms conducted by
the same facilitator in two difference times in each day.

4.2. Instruments of the Study

Three instruments were used in the study to collect data from the participants. The instruments were
(1) course material, (2) a reading comprehensions test, and (3) a reading motivation questionnaire.

(a) Course Material - It contains notes with the title “Survey Research in Educational Studies”. It
has 18 pages with twelve sub-headings: (1) The concept of survey research, (2) The function of survey
research, (3) Survey research ethics, (4) The survey research process, (5) Preparation of instruments for
survey research: questionnaires and interviews, (6) The questionnaire method, (7) The interview method,
(8) Sampling procedures, and (9) Analysis for survey data. There were 7,047 words in the text and nine
content-based humorous cartoons were integrated into it (see examples in Figure 1). To identify whether
the cartoons are humour, prior to the study, a pilot study was conducted, where a group of 30 student
teachers rated each of the cartoons on a 4-point Likert-type scale; scale 1 was “not humorous at all” while
scale 4 was “highly humorous”. Adopting the rating criteria used by Whisonant (1998), cartoons with
mean scores higher than 2.5 were considered humorous. Results of the pilot study indicated that the
cartoons were rated between mean scores of 3.43 to 3.83. Therefore, all the cartoons were included in the
material for this study. Two versions of the reading material were printed on A4 size papers: the text-only
version and text with content-based humour cartoons version. Both versions delivered the same content
and format.

(b) Reading Comprehensions Test - The reading comprehensions test is a 90 minutes test and there
were 10 short essay questions in the test. Respondents were asked to write not more than 150 words for
each question. The score for each question is 10, with a total score of 100. The questions in the test were:
(1) Describe the aims the survey research? (2) List the codes of ethics in survey research. (3) Write the
steps for selecting a systematic random sampling, (4) Elaborate how to determine the sample size for a
quantitative survey research, (5) Describe four aspects that need to be considered when preparing a
questionnaire, (6) List four differences between structured interview and non-structured interview, (7)
Elaborate four characteristics of a poor interview question, (8) Describe the roles of an interviewer, (9)
List four differences between face-to-face interview and non face-to-face interview, (10) Describe the
process of data analysis for interview data.

Answers of the participants were scored based on an answer scheme. Three lecturers were asked to
mark the answers based on the scheme. Inter-rater reliabilities (Kappa coefficients) for the scores given
by the three lecturers on the participants’ answers were high and acceptable (k > .70): k = .73 for lecturer 1-lecturer 2; k = .78 for lecturer 1-lecturer 3 and k = .84 for lecturer 2-lecturer 3. Therefore reading comprehension score for each respondent was calculated as the mean score for the scores given by the three lecturers.

(c) Reading Motivation Questionnaire - The questionnaire was adapted from the Reading Motivation Questionnaire (RMQ) of Wigfield, Guthrie and McGough (1996). It consists of 54 items for four motivation components, i.e. self-efficacy motivation, intrinsic motivation, extrinsic motivation and social motivation. The components comprise eleven dimensions of motivation. Challenge and efficacy are categorised under self-efficacy motivation. Curiosity, involvement, importance and work avoidance are categorised under intrinsic motivation. Competition, recognition and grades are listed under extrinsic motivation, and finally social and compliance are the dimensions of social motivation. The RMQ items were developed in a five-point Likert scale to assess participants’ motivation towards reading. The scales ranged from 1 (very different from me) to 5 (a lot like me). Most studies examining the RMQ have supported the four components (Parault and Williams 2009). The Cronbach’s alpha internal consistency reliability coefficients of the four dimensions were .86 (self-efficacy motivation), .89 (intrinsic motivation), extrinsic motivation (.78) and social motivation (.81).

4.3. Procedures and Data analysis

At the beginning of the experiment, the two groups answered the reading comprehensions test and the reading motivation questionnaire (pre-tests). The groups were then given the reading material to read during the three days’ course. The control group received the text only version, while the treatment groups got the text with content-based humorous cartoons version. They were encouraged to read the contents whenever they were free during the course, inside or outside the course rooms. At the end of the course, the participants answered the reading comprehension test and reading motivation questionnaire (post-tests). Through this process, pre-test and post-test scores for reading comprehension and reading motivation were collected. Besides that, they were also asked to indicate the amount of the materials they have read. The difference of reading rate between the two groups was analysed by a t-test.

Split-plot ANOVA tests were used to analyse the data for the effects of the illustrations on reading comprehension and motivation. A treatment effect is detected if a significant interaction effect occurs between the two repeated measures (pre-test and post-test) and the two groups (control and treatment). The dependent variables are reading motivation and reading comprehension, while the treatment is content-based humorous cartoons. The split-plot ANOVA test is one of the most powerful quantitative research statistics methods for experimental design because it compares the differences between control and treatment groups on their repeated measures in a single analysis (Yu & Ohlund, 2010).

4.4. Results

The result of the independent samples t-test on reading amount in percentage between the two groups was significant [t(78)=8.69, p< .05] (Table 1). The reading amount of the treatment group (test with the illustrations: mean = 83.23) out-performed the control group (text without the illustrations: mean = 65.31). It indicates that the illustrations had significantly increased reading rate of the student teachers.

| Course material       | Control group | Treatment group | T-test |
|-----------------------|---------------|-----------------|--------|
|                       | Mean (SD)     | Mean (SD)       | t      | df    | Sig.  |
| Reading amount        | 65.31 (10.08) | 83.23 (8.26)    | 8.69   | 78    | .00   |

The results of the Split-Plot ANOVA test in Table 2 indicate that significant treatment effect occurred in reading comprehension with a positive and moderate effect size [F(1, 78) = 42.31, p < .01, effect size = .58]. This indicates that illustration had significantly increased reading comprehension of the participants.
As for reading motivation, the data in Table 2 shows that overall reading motivation \( [F(1, 78) = 45.78, p < .01, \text{effect size} = .60] \) and three of the four reading motivation components yielded significant results. The components were self-efficacy motivation \( [F(1, 78) = 51.39, p < .01, \text{effect size} = .63] \), intrinsic motivation \( [F(1, 78) = 63.33, p < .01, \text{effect size} = .76] \) and social motivation \( [F(1, 78) = 34.96, p < .05, \text{effect size} = .49] \).

As a whole, the results indicate that the content-based humorous cartoons in the reading material had increased reading rate, reading comprehension and reading motivation of the participants.

### Table 2: Split-Plot ANOVA test results for effects of content-based humorous cartoons on reading comprehension and motivation

| Subscale                  | Control Pre-test Mean (SD) | Post-test Mean (SD) | MD | Treatment Pre-test Mean (SD) | Post-test Mean (SD) | MD | Pillai’s Trace Test F-ratio value at df = 1,77 | Treatment Effect p | Effect size |
|---------------------------|----------------------------|---------------------|----|----------------------------|---------------------|----|-----------------------------------------------|-------------------|-------------|
| Comprehension             | 54.5 (6.6)                 | 58.2 (6.7)          | 3.6 | 53.2 (6.7)                 | 63.3 (8.5)          | 10.1 | 42.31                                      | .00**             | .58         |
| Overall Reading ion       | 116.3 (19.4)               | 120.7 (12.7)        | 4.4 | 126.6 (17.7)               | 154.4 (11.5)        | 27.7 | 45.78                                      | .00**             | .60         |
| Self-efficacy Mot.        | 45.6 (4.5)                 | 46.2 (4.3)          | .5  | 19.7 (4.1)                 | 28.1 (3.3)          | 8.3  | 51.39                                      | .00**             | .63         |
| Efficacy                  | 6.4 (2.0)                  | 7.2 (1.7)           | .7  | 8.5 (2.1)                  | 13.5 (1.8)          | 5.0  | 42.71                                      | .00**             | .58         |
| Challenge                 | 9.2 (2.5)                  | 8.9 (2.6)           | -.2 | 11.2 (2.2)                 | 14.5 (2.8)          | 3.3  | 21.32                                      | .00**             | .37         |
| Intrinsic Motivation      | 43.6 (9.0)                 | 44.9 (5.4)          | 1.3 | 50.9 (7.3)                 | 63.3 (6.0)          | 12.3 | 65.33                                      | .00**             | .76         |
| Curiosity                 | 11.8 (2.5)                 | 10.7 (3.0)          | -1.1 | 12.4 (3.4)                 | 19.4 (2.1)          | 7.0  | 58.21                                      | .00**             | .72         |
| Importance                | 13.2 (3.5)                 | 14.3 (3.1)          | 1.0  | 15.2 (3.2)                 | 15.6 (3.1)          | .3   | 27.7                                       | .00**             | .05         |
| Involvement               | 11.2 (2.8)                 | 12.4 (2.5)          | 1.2  | 13.9 (3.3)                 | 17.8 (3.6)          | 3.8  | 16.57                                      | .00**             | .34         |
| Work avoidance            | 7.3 (2.4)                  | 7.4 (2.1)           | .1   | 9.2 (3.3)                  | 10.4 (3.4)          | 1.2  | 1.17                                       | .33               | .07         |
| Extrinsic Motivation      | 33.1 (3.8)                 | 33.9 (2.6)          | .8   | 34.0 (4.3)                 | 35.5 (3.1)          | 1.4  | .02                                        | 2.12              | .01         |
| Competition               | 17.3 (1.2)                 | 17.7 (1.2)          | .4   | 16.8 (1.47)                | 16.9 (1.1)          | .1   | .35                                        | 1.59              | .03         |
| Recognition               | 7.2 (2.1)                  | 7.3 (2.3)           | .0   | 8.8 (2.9)                  | 9.5 (3.2)           | .7   | 1.17                                       | .82               | .07         |
| Grades                    | 8.5 (1.0)                  | 8.9 (1.0)           | .3   | 8.3 (1.4)                  | 9.0 (1.1)           | .6   | .45                                        | .51               | .05         |
| Social Motivation         | 30.8 (4.7)                 | 31.6 (3.2)          | .7   | 37.0 (4.7)                 | 46.9 (3.1)          | 9.9  | 34.96                                      | .01               | .49         |
| Social                    | 11.3 (2.4)                 | 10.6 (3.3)          | -.6  | 13.1 (2.58)                | 18.7 (3.1)          | 5.5  | 27.39                                      | .00**             | .43         |
| Compliance                | 19.4 (2.3)                 | 20.9 (3.4)          | 1.4  | 23.9 (2.3)                 | 28.2 (2.2)          | 4.3  | 16.91                                      | .00**             | .34         |

Note: **\(p < .01\); MD = Mean difference between pre-test and post-test scores

5. The Survey Study – Opinions of Students on the Content-Based Humorous Cartoons

The participants in the treatment groups of the experimental study who received the materials with content-based humorous cartoons \( (n= 40) \) were selected as the survey respondents.

5.1. Survey questionnaire

The survey questionnaire consisted of two sections. Section one contained four Likert scale items. The items were: (1) Are the illustrations suitable for inclusion in the reading material? (2) Do the illustrations facilitate your reading? (3) Does the inclusion of the illustrations make your reading more enjoyable? (4) Do you think the illustrations should be maintained in the material? Section two considers the opinions of the student teachers concerning the content-based humorous cartoons on their reading. It is an open-ended item, asking the respondents to list the impacts of illustrations in the course material on their reading. The responses collected from the readers were analyzed by a multiple response analysis. The results of the analysis are presented in frequency and percentage.

5.2. Results

Results of the survey items in section one indicate that the majority of the respondents strongly agreed that the content-based humorous cartoons are suitable for inclusion in the course material \( (82.42\%) \), the illustrations facilitate reading \( (83.64\%) \), the inclusion of the illustrations has made reading more enjoyable \( (82.42\%) \), and illustrations should be maintained in the course material \( (86.06\%) \).
For the survey item in section two, Table 3 depicts the opinions of the respondents for positive and negative responses on the use of content-based humorous cartoons in the course materials. The table show that 97.65% of the responses were positive while 2.35% of the responses were negative.

Table 3: Responses to the use of humorous cartoons in the course materials

| Positive Response                                                                 | Count | % of Responses | % of Cases |
|----------------------------------------------------------------------------------|-------|----------------|------------|
| Make reading and learning fun                                                    | 36    | 7.07           | 90.00      |
| Have a positive impact on reading                                               | 35    | 6.88           | 87.50      |
| Messages conveyed through the illustrations help to understand or digest the      |       |                |            |
| research concept in the reading material in a shorter time                       | 35    | 6.88           | 87.50      |
| Learning becomes more meaningful with the illustrations                          | 33    | 6.48           | 82.50      |
| Stimulate the participants’ imagination and open his mind to accept the facts    |       |                |            |
| presented in the reading material                                               | 31    | 6.09           | 77.50      |
| Reduce the intellectual gap between the course’s facilitator and participants    | 31    | 6.09           | 77.50      |
| Lighten the highly academic contents of the reading material                     | 27    | 5.30           | 67.50      |
| Reduce the pressure of reading                                                   | 26    | 5.11           | 65.00      |
| Release tension on academic elements especially statistics                       | 24    | 4.72           | 60.00      |
| Ease the tedium or boredom of reading                                           | 23    | 4.52           | 57.50      |
| Increase reading resiliency                                                      | 23    | 4.52           | 57.50      |
| Enhance the participants’ patience in reading                                    | 22    | 4.32           | 55.00      |
| Increase my extrinsic reading motivation                                         | 21    | 4.13           | 52.50      |
| Increase the participants’ willingness to read the material                      | 21    | 4.13           | 52.50      |
| The content-based humorous cartoons are effective communication tools            | 21    | 4.13           | 52.50      |
| Reduce feeling of satiation in relation to reading                               | 15    | 2.95           | 37.50      |
| Make the reading material user-friendly                                         | 15    | 2.95           | 37.50      |
| Trigger the participants’ minds to think about the topics under discussion       | 14    | 2.75           | 35.00      |
| Enhance graciousness of the reading material                                     | 9     | 1.77           | 22.50      |
| Arouse the participants’ interest, leading participants to spend more time       |       |                |            |
| exploring the reading material’s contents                                         | 8     | 1.57           | 20.00      |
| Trigger the participants to put extra energy into the learning process           | 7     | 1.38           | 17.50      |
| Improve the participants’ ability to recall information from the reading material| 7     | 1.38           | 17.50      |
| Motivate the participants to read and reread the reading material                | 7     | 1.38           | 12.50      |
| The illustrations are needed for any kind of academic reading materials          | 6     | 1.18           | 15.00      |
| Total responses                                                                  | 497   | 97.65          | 1242.50    |

| Negative Response                                                              | Count | % of Responses | % of Cases |
|---------------------------------------------------------------------------------|-------|----------------|------------|
| The reading material becomes less formal                                       | 2     | .39            | 6.00       |
| Have negative impact on the participants’ thinking                            | 2     | .39            | 5.67       |
| The course material should be formally presented                              | 2     | .39            | 5.67       |
| The cartoons might involve sensitive issues                                     | 2     | .39            | 5.00       |
| Inclusion of the illustrations in the reading material does not make much       |       |                |            |
| difference to its contents                                                     | 2     | .39            | 5.00       |
| It may influence the participants’ perspectives on the value of the reading     | 1     | .20            | 3.67       |
| material                                                                           |       |                |            |
| Reduce their thinking abilities – the participants might accept the information | 1     | .20            | 3.00       |
| in the reading material without deliberation                                  |       |                |            |
| Total responses                                                                | 12    | 2.35           | 30.00      |

The data in Table 3 indicate that the majority of the readers opined that the illustrations had made their reading and learning fun (90.0%), had a positive impact on their reading (87.5%), the messages conveyed through the illustrations helped them to understand or digest the research concept in a shorter time (87.5%), learning became more meaningful with the illustrations (82.5%), the illustrations reduce the intellectual gap between the course’s facilitator and participants (77.5%), and the illustrations stimulated their imagination and opened their minds to facts presented in the reading material (77.5%). Nearly half of the participants indicated that the illustrations lightened the highly academic contents of the reading material (67.5%), reduced their pressure of reading (65.0%), released their reading tension on academic elements especially statistics (60.0%), eased the tedium or boredom of reading (57.5%), increased their reading resiliency (57.5%), enhanced their patience in reading (55.0%), and increased their extrinsic
reading motivation (52.5%). Some readers commented that the inclusion of the illustrations in the reading material are effective communication tools (52.5%), they increased their willingness to read the materials (52.5%), reduced the feeling of satiation in relation to reading (37.5%), made the reading material user-friendly (37.5%), triggered the mind to think about the topics under discussion (35.0%), enhanced the graciousness of the reading material (22.5%), aroused their reading interest, leading them to spend more time exploring the reading material’s contents (20.0%), triggered them to put extra energy into the learning process (17.5%), improved their ability to recall information from the course material (17.5%), and motivated them to read and reread the reading material (12.5%). They also opined that the content-based illustrations are needed for any kind of academic reading materials (15.0%)

As shown in Table 3, 2.35% or 12 out of a total of 509 responses had a negative view of the use of content-based humorous cartoons in the reading material. A small number of readers cautioned that the inclusion of the illustrations had made the reading material less formal (.39%). They felt that the illustrations had a negative impact on their thinking (.39%). According to these student teachers, the course material should be presented in a formal manner (.39%). They were also worried that some of the cartoons might involve sensitive issues (.39%). To these student teachers, there is really not much of a difference in the contents of the reading material with or without the illustrations (.39%) and the illustrations might influence course participants’ perspectives on the value of the reading material (.20%). A student teacher added that the illustrations could reduce their thinking abilities – the course participants might accept the information in the reading material without deliberation (.20%)

6. Discussion

The results of the experimental study indicate that the content-based humorous cartoons in the course material had increased reading rate, comprehension and reading motivation of the student teachers. The findings show that the illustrations increased the student teachers’ satisfaction from mastering complex ideas presented in the reading material and their willingness to learn difficult things through reading (challenge); strengthened their beliefs in their abilities to do well in reading and learning (efficacy); increased their desire to learn about the contents of reading material (curiosity); increased their willingness to participate in reading and learning the contents in the material (involvement). Besides that, the illustrations improved their desire to share the knowledge they have learned from reading the material with others (social), and increased their willingness to learn course material given to them (compliance). The findings reflect the ability of the content-based humorous cartoons to stimulate the participants to read the contents with higher concentration.

Why the illustrations were capable in increasing reading comprehension of the student teachers? A possible reason is the he repetition effect of the text and illustrations that influences the quality of understanding (Gyselinck & Tardieu, 1999). According to Kuzu, Akbulut & Sahin (2007), when the information from the text and from the illustration is well integrated, they act as if the information was presented twice, thus enhancing reading comprehension. It is consistent with the Dual Coding Theory (Khoi & Forouzesh, 2010; Sadoski & Paivio, 2001), that when the information from the text and from the illustration is well integrated, the interconnectedness of the two information processing subsystems facilitates the interpretation of information and thus improves reading comprehension.

Despite some people questioning the benefits of illustrations in reading texts, and identifying some negative effects of humor (Morreall, 2010), this study provides evidence of the function of content-based humorous cartoons. Furthermore, the student teachers felt that content-based humorous cartoons can be adopted in course materials to increase readability. Most of them opined that the illustrations have positive impacts on their reading motivation and its use in course materials can help enhance the concept that reading the materials can be a fun activity, although a few of them were worried that the inclusion of humorous cartoons in the reading material might create negative impacts. The survey-generated list of benefits of content-based humorous cartoons in the course materials include stimulate the participants’
imagination; lighten the content of the reading material; reduce the pressure of reading; reduce intellectual gap; release tension of reading; ease the tedium or boredom of reading; enhance patience in reading; increase extrinsic reading motivation; increase the willingness to read the material; reduce feeling of satiation in relation to reading; trigger the mind to think about the topics under discussion; increase reading resiliency; enhance graciousness of the reading material; and improve the ability to recall information. This list of benefits is an emergent result that should be recognised because it provides useful information and references for future research concerning the impacts of content-based humorous cartoons in reading materials.

The results support recent research findings that humor heightens intrinsic motivation (Chik, 2005; Aboudan, 2009), strengthens memory and increases reading comprehension (Atir, 2010; Strick, Holland, van Baaren & van Knippenberg, 2010). The results further support the Relief Theory of Laughter (Meyer, 2006), that emotional energy is released by humorous illustration and it acts as a positive motivation towards the reading and learning process.

For the course material to be well-received by the participants, it must have strong points to attract course participants. As pointed out by the participants in the survey study and previous researchers, content-based humorous cartoon could be used in the reading material to reduce the intellectual gaps and blur the boundaries between the course facilitator and participants because it can foster virtues such as open-mindedness, patience, tolerance, graciousness, humanity, perseverance, and courage (Morreall, 2010); physiologically release tension, single out violations of a rationally learned pattern, and unite communicators (Meyer, 2006). Humorous illustrations may also help in long-term retention of information and in making the learning experience more pleasurable (Zillmann & Bryant 1983; Coleman, 1992). As indicated by the findings of this study, inserting content-based humorous cartoons in an course materials could be a good technique and strategy to heighten participants’ self-efficacy, intrinsic and social motivation which will, in turn, increase reading rate, heighten reading comprehension and reading satisfaction.

This study did not examine the impacts or effects of humor and cartoon separately. Cartoon and humour are two different elements (Keogh & Naylor, 1999), and each of the elements could enhance reading motivation and skills (Dementrulis, 1982; Heintzmann, 1989). The question of “Which element contributes more towards improving reading motivation and reading comprehension? Cartoon or humour, or the combination of both?” is not the focus of this study. Further studies can be done and built on the design of this study to compare the effects of humor and cartoon on reading. The study also limited by small sample size of the survey study due to the nature setting of the study.

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