Effects of Reading Motivation and Perceived Quality of the Reading Space
On Students' Affective Responses

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Abstract
Reading motivation and perceived quality of the reading space are considered to influence students' affective responses in reading. This study chose college students as respondents because reading is part of daily learning activities. Reading activities emerge because of the students' motivation to read. College students intentionally choose a reading space that complies with these activities. The aim of this study was to find the influence of reading motivation and perceived quality of the reading space on the students' affective responses. Data collection was carried out based on an online survey questionnaire. Exploratory qualitative research was conducted to collect data based on information about the motivation and rationale for selecting a specific place to read. Explanatory quantitative research was conducted to interpret the causal relationship between reading motivation and perceived quality of the reading space towards students' affective responses. The results showed that the perceived quality of the reading space was the more dominant factor influencing affective responses compared to reading motivation. The users assessed the quality of the reading space on the basis of the factors "ease and comfort", "hustle" and "tranquility". Furthermore, some reading motivations, i.e. the factors "improve inspiration" and "entertainment", affectively influenced the students' thinking ability.

Keywords: affective response; college students; perceived quality; reading motivation; reading space

1. Introduction
Reading activities are part of the daily learning process of students. Reading activities happen based on various motivations, such as the requirements of a task, indulgence, or the desire to find specific information. A person can read anytime and anywhere. Reading activities conducted in different reading spaces lead to different affective responses. The focus of this study was evaluation of the reading behavior of college students.

Two kinds of motivation can be distinguished in students, i.e. intrinsic and extrinsic (Ryan and Deci, 2000). Students who are motivated to read because they enjoy reading and have the mindset that reading is something valuable (Vallerand and Bissonnette, 1992) can be described as having intrinsic motivation. Extrinsic motivation can be described as a boost from external factors, such as making a deadline or obtaining a reward. Each individual has the freedom to choose the way in which to gain knowledge, including the selection of books to read. A student's freedom in choosing books can enhance reading motivation (Wigfield, 1994). The present research identified different motivations for reading in students, resulting in categories of students' reading motivation.

Learning activities (reading in this study) are related to the learning environment. Here are a few examples of the relationship between the learning environment and users: playground facilities have a positive contribution in shaping the behavior of children and on their well-being and restoration (Bagot et al., 2015); tools, materials, and different spatial outdoor learning environments affect children physically and in their social skill development (Barbour, 1999); poor building facilities and high student mobility affect student performance levels and academic achievements (Evans et al., 2010); negative feelings (mood) can come from tasks that are being worked on while positive feelings come from the environment, especially open environments (Stone, 2001). In order to meet reading requirements, students can use different types of places, such as libraries, cafes, or their own living space. A learning place that is flexible to the needs of
the user can support a student in reconstructing the knowledge without having to be forced (Savin-Baden, 2007). The present research explored the reasons students have for choosing a particular place to read, resulting in categories of the perceived quality of the reading space.

A physical environment affects human response (Kinnafick and Thogersen-Ntoumani, 2014). The combination of physical environment and activity is able to positively influence the affective response. Russell (1980) describes the affective response as a circumplex model of affects divided into four quadrants: unactivated pleasant affects (relaxation and calmness); unactivated unpleasant affects (boredom, fatigue, or depression); activated unpleasant affects (tension and distress); and activated pleasant affects (energy, excitement, and enthusiasm) (Ekkekakis et al., 2000). The present study explored the affective responses of respondents (in this case college students) focused on reading. Through exploration of the reasons why students choose a specific place to read based on specific motivations, a number of affective response categories were distinguished that appear specifically related to reading activities and environments.

This study focused on categorizing reading motivations, the perceived quality of the reading space, and affective responses in reading. The goal was to find the relationship between categories of reading motivations and categories of perceived reading space quality towards categories of students' affective responses in reading.

2. Methods

A mixed qualitative-quantitative research method (Creswell, 2008) was used in this study. Exploratory qualitative research (Groat and Wang, 2002) was conducted to obtain data that contain information about the motivation and the rationale for selecting a particular place to read. Exploratory quantitative research (Groat and Wang, 2002) was conducted to interpret the causal relationship between reading motivations and the perceived quality of the reading space towards the students' affective responses.

Data collection was carried out using an online survey questionnaire. The questionnaire was distributed freely (snowball sampling) through personal acquaintances who were college students. They were asked to disseminate the online questionnaire to other acquaintances who were college students. They were asked to gauge the level of reading motivation, the perceived quality of the reading space, and their affective response in reading through closed-ended questions that were compiled using a semantic-differential (SD) method. Each question had answers on a scale from 1 to 5 between two polar opposites. Table 1. shows some sample questions from the online questionnaire.

| Category                          | Example                                |
|-----------------------------------|----------------------------------------|
| Reading motivation                | Reading helps refreshing my mind        |
|                                   | Strongly disagree                       |
|                                   | 1 2 3 4 5 Strongly agree                |
| Perceived quality of the reading space | Has a conducive atmosphere             |
|                                   | Not very conducive                     |
|                                   | 1 2 3 4 5 Very conducive                |
| Affective response                | Your ability to focus on reading        |
|                                   | Very unfocused                         |
|                                   | 1 2 3 4 5 Very focused                 |

The participants were asked to gauge the level of reading motivation, the perceived quality of the reading space, and their affective response in reading through closed-ended questions that were compiled using a semantic-differential (SD) method. Each question had answers on a scale from 1 to 5 between two polar opposites. Table 1. shows some sample questions from the online questionnaire.

The result of the content analysis of the questions regarding reading motivation was used to structure the closed-ended questions about reading motivation. Twenty-five reading motivation variables were retrieved, namely "academic requirement", "task fulfillment", "exam preparation", "lack of knowledge", "hard-skill training", "intriguing reading", "fun reading", "interesting story", "improve inspiration", "be creative", "improve imagination", "seek entertainment", "refresh the mind", "kill time", "like the topic", "updated information", "motivate myself", "improve knowledge", "gain rewards (pahalala)", "learning experience", "related to a hobby", "try new things", "find out things", "nice cover", and "light reading".

The result of the content analysis of the questions regarding the rationale for choosing a specific place to read was used to structure the closed-ended questions about the perceived quality of the reading space and the students' affective responses. Twelve variables concerning the perceived quality of the reading space were retrieved, namely "comfort", "peace", "delight", "conducive", "relaxation", "crowd", "noise", "distraction", "silence", "calmness", "privacy", and "temperature". Four variables concerning the students' affective responses were retrieved, namely "adjustability", "mood triggering", "ability to imagine/daydream", and "ability to focus".

At the second stage of data collection, closed-ended quantitative questions for an online questionnaire were derived from the qualitative data retrieved at the first stage. The second online questionnaire was distributed on October 23, 2015 and closed on October 31, 2015. The 116 respondents consisted of 95 (81.89%) who were undergraduate students and 21 (18.11%) who were graduate students in several cities in Indonesia, aged from 17-30.

The participants were asked to gauge the level of reading motivation, the perceived quality of the reading space, and their affective response in reading through closed-ended questions that were compiled using a semantic-differential (SD) method. Each question had answers on a scale from 1 to 5 between two polar opposites. Table 1. shows some sample questions from the online questionnaire.

Table 1. Sample Questions with SD Method

| Category                          | Example                                |
|-----------------------------------|----------------------------------------|
| Reading motivation                | Reading helps refreshing my mind        |
|                                   | Strongly disagree                       |
|                                   | 1 2 3 4 5 Strongly agree                |
| Perceived quality of the reading space | Has a conducive atmosphere             |
|                                   | Not very conducive                     |
|                                   | 1 2 3 4 5 Very conducive                |
| Affective response                | Your ability to focus on reading        |
|                                   | Very unfocused                         |
|                                   | 1 2 3 4 5 Very focused                 |
The results in the form of numerical data were analyzed quantitatively using principal component analysis (PCA) and factor analysis. PCA was used to discover the principal components (latent variables) that can be used to represent the measured variables by collecting all possible variabilities of several components of the main principles. The result was then analyzed further by using multivariate analysis in order to find causal relationships between the latent variables.

3. Findings and Discussion

From the PCA results, a number of principal components (eigenvectors) were determined by using Kaiser's (1960) stopping rule. Steven (1986) and Grimm and Yarnold (1995) state that if the number of variables is smaller than 30, Kaiser's stopping rule should be applied. The authors considered Kaiser's stopping rule appropriate for this study. It was applied by extracting the number of principal components with an eigenvalue greater than one (which means that they have a value that exceeds the variability of the measured variables, so they can be used to represent the measured variables).

In the next step, factor analysis was conducted to obtain latent variables (dimensions) that could easily be named. Factor analysis was carried out with principal component rotating, using varimax orthogonal rotation so that the components would not correlate. Factor loading of each measured variable associated with the latent variables was determined to be as large as possible and factor loading unrelated to the latent variables was determined to be near zero.

From the PCA results on reading motivation, seven principal components had an eigenvalue greater than one (with a cumulative percentage of 68.11%), which was considered sufficient to describe and represent the phenomena of 25 measured variables. The latent variables derived from the factor analysis are shown in Table 2. Seven latent variables describe and represent the motivation of the students in reading, namely "academic factors", "appeal of reading", "improve inspiration", "entertainment", "desire to learn", "related to a hobby", and "visual reading".

The latent variables of reading motivation tended to correspond with learning motivation as described by Ryan and Deci (2000). Extrinsic motivation can be described as a reading intention because of academic requirements, such as task fulfillment and exam preparation. Intrinsic motivation can be described as a desire from within the individual to learn for knowledge acquisition, inspiration improvement, or related to a hobby. Intrinsic motivation can also be triggered by curiosity towards certain texts, both in terms of content and visual appearance.

From the PCA of the perceived quality of the reading space, three principal components had an eigenvalue of more than one (with a cumulative percentage of 66.18%), which is considered sufficient to describe and represent the phenomena of 12 measured variables. The latent variables derived from the factor analysis results are shown in Table 3. Three latent variables describe the perceived quality of the reading space, namely "ease and comfort", "hustle", and "tranquility".

Table 2. Latent Variables from Factor Analysis Results with Varimax Rotation of 7 Principal Components

| Variable                | Academic factors | Appeal of reading | Improve inspiration | Entertainment | Desire to learn | Related hobbies | Visual reading |
|-------------------------|------------------|-------------------|---------------------|---------------|----------------|----------------|----------------|
| Academic requirements   | 0.88             | 0.05              | 0.14                | -0.01         | -0.06          | 0.19           | -0.05          |
| Task fulfillment        | 0.86             | 0.12              | 0.03                | -0.01         | -0.02          | 0.03           | 0.22           |
| Exam preparation        | 0.86             | 0.15              | -0.08               | -0.16         | -0.04          | -0.09          | 0.16           |
| Lack of knowledge       | 0.56             | 0.04              | -0.09               | -0.13         | 0.15           | 0.25           | -0.01          |
| Hard-skill training     | 0.45             | -0.06             | 0.13                | -0.09         | 0.43           | 0.43           | 0.28           |
| Intriguing reading      | 0.06             | 0.36              | -0.10               | 0.08          | 0.15           | 0.01           | 0.04           |
| Fun reading             | 0.17             | 0.78              | 0.09                | -0.01         | 0.03           | 0.06           | 0.24           |
| Interesting story       | 0.08             | 0.77              | 0.05                | 0.15          | -0.02          | 0.03           | 0.00           |
| Improve inspiration     | 0.12             | -0.10             | 0.80                | 0.11          | 0.34           | 0.05           | 0.03           |
| Be creative             | -0.07            | -0.03             | 0.79                | 0.25          | 0.21           | 0.22           | -0.01          |
| Improve imagination     | -0.05            | 0.45              | 0.55                | 0.13          | -0.19          | 0.27           | 0.03           |
| Seek entertainment      | -0.17            | 0.16              | 0.16                | 0.78          | -0.04          | 0.20           | -0.24          |
| Refresh the mind        | -0.01            | -0.01             | 0.18                | 0.77          | 0.23           | 0.04           | -0.07          |
| Kill time               | -0.22            | 0.21              | 0.13                | 0.72          | 0.12           | 0.02           | 0.14           |
| Like the topic          | 0.26             | 0.34              | -0.09               | 0.38          | 0.32           | 0.27           | 0.10           |
| Updated information     | 0.07             | 0.29              | 0.09                | -0.40         | 0.36           | 0.34           | 0.32           |
| Motivate myself         | -0.02            | 0.02              | 0.23                | 0.18          | 0.72           | 0.14           | 0.11           |
| Improve knowledge       | -0.09            | 0.18              | 0.39                | 0.01          | 0.63           | 0.04           | -0.41          |
| Gain rewards (paahala)  | 0.07             | -0.02             | 0.05                | 0.34          | 0.45           | 0.28           | 0.07           |
| Learning experience     | -0.02            | 0.15              | 0.43                | 0.24          | 0.44           | -0.23          | 0.33           |
| Related to a hobby      | 0.18             | 0.04              | 0.14                | 0.06          | -0.04          | 0.75           | 0.01           |
| Try new things          | 0.06             | 0.04              | 0.08                | 0.19          | 0.21           | 0.69           | 0.23           |
| Find out things         | 0.07             | 0.16              | 0.48                | 0.03          | 0.36           | 0.56           | -0.16          |
| Nice cover              | 0.09             | 0.17              | 0.19                | -0.10         | -0.09          | 0.12           | 0.81           |
| Light reading           | 0.24             | 0.11              | -0.24               | -0.03         | 0.24           | 0.10           | 0.67           |
Based on the latent variables obtained, the students tended to assess the reading space mainly from the ease and comfort point of view, the level of hustle that can be tolerated, and the level of tranquility that is suitable for reading.

From the PCA of the students' affective responses in reading, only one principal component was found that had an eigenvalue of more than one. To be able to rotate the principal components, the number of principal components should be greater than one. This means that the first two principal components (with a cumulative percentage of 83.42%) could be considered sufficient to describe and represent the phenomena of the four measured variables. Table 4. shows the latent variables derived from the factor analysis. Two latent variables describe the students' affective responses, namely "reading attachment" and "thinking ability".

Table 4. Latent Variables from Factor Analysis with Varimax Rotation of 2 Principal Components

| Variable       | Reading attachment | Hustle | Tranquility |
|----------------|--------------------|--------|-------------|
| Comfort        | 0.85               | -0.15  | 0.17        |
| Peace          | 0.82               | -0.12  | 0.27        |
| Delight        | 0.80               | -0.04  | -0.09       |
| Conducive      | 0.77               | -0.18  | 0.33        |
| Relaxation     | 0.73               | -0.19  | 0.10        |
| Crowd          | -0.06              | 0.86   | 0.01        |
| Noise          | -0.19              | 0.78   | -0.01       |
| Distraction    | -0.11              | 0.76   | -0.06       |
| Privacy        | 0.18               | -0.55  | 0.35        |
| Temperature    | 0.17               | 0.10   | 0.81        |
| Silence        | 0.13               | -0.52  | 0.65        |
| Calmness       | 0.43               | -0.45  | 0.46        |

These latent variables focus on reading activities. The relationship between latent variables and affective response can be described using Russell’s (1980) circumplex models. They tend to have similarities with the influence of pleasure, both activated and unactivated. The affective response "reading attachment" can be described as an activated pleasant affect because there is a relation with relaxation and adjustment. The affective response "thinking ability" can be described as an unactivated pleasant affect because there is a relation with consumption energy and requires a level of excitement and enthusiasm. Both responses can also be described as general psychological reader responses.

The results of the factor analysis of reading motivation, perceived quality of the reading space, and students' affective responses were analyzed using multivariate analysis to find the correlation between these three factors. A possible conjecture is that reading motivation is correlated with the perceived quality of the reading space. However, most of the correlation coefficients between these two factors were below 0.1 (very low). The researchers have found no literature expressly confirming a relationship between these two factors. According to the principle of a causal relationship, a sequentially independent variable should precede a dependent variable. Referring to this principle, it cannot be determined which factor comes first between reading motivation and perceived quality of the reading space. Therefore, in this study the factors of reading motivation and perceived quality of the reading space were considered independent variables, while the students' affective responses were considered dependent variables. Table 5. shows the results of the multivariate correlation analysis.

Table 5. Multivariate Correlation Analysis of Reading Motivation and Perceived Quality of the Reading Space Towards Students' Affective Responses

| Independent variable | Academic factors | Appeal of reading | Improve inspiration | Entertainment | Desire to learn | Related hobbies | Visual reading | Ease and comfort | Hustle | Tranquility |
|----------------------|------------------|-------------------|---------------------|---------------|----------------|----------------|----------------|-----------------|--------|-------------|
| Dependent variable   | Reading attachment | Thinking ability  |                     |               |                |                |                |                 |        |             |
| Academic factors     | 0.00             | 0.04              |                     |               |                |                |                |                 |        |             |
| Appeal of reading    | 0.08             | 0.02              |                     |               |                |                |                |                 |        |             |
| Improve inspiration  | 0.16             | 0.20*             |                     |               |                |                |                |                 |        |             |
| Entertainment        | 0.05             | 0.30***           |                     |               |                |                |                |                 |        |             |
| Desire to learn      | 0.10             | 0.01              |                     |               |                |                |                |                 |        |             |
| Related hobbies      | 0.12             | -0.01             |                     |               |                |                |                |                 |        |             |
| Visual reading       | -0.13            | -0.11             |                     |               |                |                |                |                 |        |             |
| Ease and comfort     | 0.59***          | 0.31***           |                     |               |                |                |                |                 |        |             |
| Hustle               | -0.20*           | -0.28**           |                     |               |                |                |                |                 |        |             |
| Tranquility          | 0.09             | 0.27**            |                     |               |                |                |                |                 |        |             |

The result shows that the motivation to read did not have a significant correlation with the affective responses. The motivations "improve inspiration" (r = 0.20; p = 0.0279) and "seek entertainment" (r = 0.30; p = 0.0009) were assessed to contribute affectively to thinking ability. As stated by Russell (1980), affectivity can be broadly described as having pleasant or unpleasant feelings. The effect of the latent variables concerning the motivations to improve inspiration and to seek entertainment had a greater influence on the affective response in reading than the other variables because they have an intrinsic motivational basis in seeking pleasure and satisfaction (Vallerand and Bissonnette, 1992).

The perceived quality of the reading space tends to have more influence on the affective response than reading motivation. The "ease and comfort" factor (r = 0.59; p < 0.0001) had the largest influence on the respondents' attachment to reading. They felt
more attached to reading when the reading place was comfortable, peaceful, delightful, conducive, and relaxing. However, the number of users of a reading space negatively affects reading attachment. A reading space that is too crowded, noisy and full of distractions (r = −0.20; p = 0.0340) can reduce the reading attachment. The perceived quality of the reading space also had an influence on the ability to think. The "ease and comfort" factor (r = 0.31; p = 0.0007) improved the ability to imagine and focus on reading. Places that offer "tranquility" (r = 0.27; p = 0.0036), silence, and calmness also help to improve reading skills. Similar to reading attachment, the number of users of the reading space that cause "hustle" (r = −0.28; p = 0.0020) can reduce the ability of students to think.

4. Conclusion

The motivation to read books and reasons for choosing a particular place to read were analyzed to find latent variables of reading motivation, perceived quality of the reading space, and students' affective responses in reading. The seven latent variables of reading motivation that were retrieved, tended to correspond with learning motivation as described by Ryan and Deci (2000), who distinguish two kinds of motivation in students, i.e. intrinsic and extrinsic. Three latent variables of the perceived quality of the reading space describe the relationship between student and reading environment through the assessment of the reading space, which tended to be seen from the point of view of "ease and comfort", the level of "hustle" that can be tolerated, and the level of "tranquility" that is suitable for reading. Two latent variables were found as the students' affective responses in reading, i.e. "reading attachment" and "thinking ability".

The perceived quality of the reading space tended to have a greater influence on the affective response than reading motivation. Reading motivation needs to have intrinsic elements, such as seeking pleasure or satisfaction, for it to be able to influence the affective response of thinking ability. This motivation could be a desire to "improve inspiration" or to "seek entertainment". A reading space that offers a comfortable and less crowded environment is capable of influencing students' attachment to reading and improving the ability to think. A reading space that offers tranquility also helps to improve the students' thinking ability.

In a future study, the identification of latent variables could be replicated to obtain improved results in support of developing new knowledge on reading motivation, the reading space and affective responses focused on reading. The sampling method used in this study does not provide a definitive insight into the population (college students). There are several ways to replicate this study using different sampling strategies (e.g. proportional random sampling) in order to obtain a more representative result. Geographical factors and the number of respondents are also expected to yield different results.

The result of the present study has the advantage of being focused on one activity, i.e. reading. In discussions on learning environments, the study of motivation is well represented. The latent variable of reading motivation can provide additional knowledge to the study of learning motivation. The latent variable of perceived quality of the reading space shows that users and the reading environment have a relationship of mutual influence. This relationship explains the effects and/or users' assessments of a space's ability to facilitate reading activities. Finally, the study of affective responses in reading can provide additional knowledge to the study of affective responses in general.

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