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Developing a Scale to Measure Reader Self-Perception for EFL Students

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Abstract

The development of a scale for measuring self-perception for readers of English as a foreign language is discussed in this paper. The scale was developed from the four dimensions of self-efficacy theory proposed by Bandura (1977a): progress, observational comparison, social feedback and physiological states. A 36 item scale was developed to measure the four dimensions. Five hundred and fourteen Thai EFL students at the college level completed the scale. Factor analyses and item-total correlations indicated that most of the items best defined their own constructs. Cronbach's alpha internal reliabilities also indicated a strong coherence of the items in measuring their proposed dimensions. Students' achievements in reading and writing in English are correlated with the scale. Regression analyses showed that the Self-Perception Scale for Readers of English as a Foreign Language (SPSREFL) is a significant predictor for students' reading achievement.

Keywords: EFL Reader Self-Perception Scale, EFL readers, reading ability

Self-efficacy or self-perception is defined as the individual's judgment of how well one can organize and implement actions in a specific situation, which may contain ambiguous, unpredictable, and stressful elements (Bandura, 1977a). Wigfield and Karpachian (1991) also explained self-perception as knowledge structures about the self that organize the individuals' interpretations of their experiences and guide their behaviors. Self-perception is hypothesized to have an impact on the choices of activities, effort expenditure, perseverance in the face of difficulties and expectations of eventual success (Bandura, 1977b; Bandura & Schunk, 1981). For instance, individuals tend to determine their ability to perform in a given situation and then form expectations of their success or failure. This, in turn, affects their future achievement-oriented behavior (Weiner et al., 1971). When individuals have low assurance that they will actually be able to accomplish a task, they tend to become fearful and stressed, and attempt to avoid the task they believe exceeds their coping capacity. In contrast, when individuals judge that they are capable of handling a situation, they become highly involved in the activities and apply strategies to help them troubleshoot the potential problems in performing the task. Despite the difficulties, individuals who perceive potential success are inclined to persist in the face of setbacks and exert more effort in order to reach the expected goals. Bandura's study on self-efficacy (1989) indicated that learners with high perception of their own abilities tend to try harder, continue in the face of obstacles and succeed more often than those who have a negative self-perception of their ability to perform a specific task.

Individuals acquire information about their own abilities from four major sources: performance accomplishments, vicarious experience, verbal persuasion and physiological arousal (Bandura, 1977a, 1981). First, experiencing success raises individuals' self-efficacy; on the other hand, encountering failure lowers their self-efficacy. Surprisingly, once individuals' self-efficacy is enhanced, there is a tendency to generalize a sense of success to similar situations. When individuals believe that success is possible due to their own abilities, they will attempt similar endeavors in similar

tasks and will set their goals higher (Weiner, 1972, 1979; Weiner et al., 1971).

The second source of information that individuals use to make self-perception judgments is the individuals' observations of their peers attaining success at a task. When individuals see their peers perform and accomplish a task without adverse consequence, this seems to convey an almost vicarious sense of positive efficacy and the belief that they can accomplish the task as well. Ruble's study (1983) revealed that children obtain information about various aspects of their own efficacy from peers. She also asserted that the social-comparison information has an impact on the accuracy of children's evaluations of their competence.

Verbal persuasion is the third source of information about individuals' self-perception. People are led to believe that they are capable of succeeding at a particular task by trustworthy sources such as parents and teachers. Obtaining encouragement especially from credible informants could help individuals to perceive their ability and make them confident in their competence to deal with a particular task. Finally, individuals acquire information about their competence in performing a task from observing their physiological states. Physiological cues such as depression, anxiety, fatigue, sweating and trembling may signal probable failure to individuals.

Research has also shown that self-perception impacts an individual's overall orientation towards learning tasks which in turn influences the learner's choices of activities, effort expenditure, persistence and the expectations of success. It seems reasonable to expect that, if EFL teachers are able to obtain information about EFL students' self-perception as readers of English, they will be better able to help their students gain competence, improve negative perceptions which students might have and provide appropriate instruction to fulfill the students' needs. EFL teachers could perhaps vary tasks and assignments and select appropriate readings to promote students' success. In addition, teachers would be able to revise grouping techniques which encourage cooperative learning to heighten students' observational comparison and social feedback perceptions (Henk & Melnick, 1992, 1995).

Self-perception influences students' reading achievement (Alvermann & Guthrie, 1993; Barkley, 2006; Bottomley, Henk, & Melnick, 1997/1998; Henk, Marinak, & Melnick, 2012/2013; Pajares & Valiante, 1997; Retelsdorf, Köller, Möller, 2014; Scott, 1996; Shell, Colvin, & Bruning, 1995). It has been established that self-perception helps determine an individual's overall orientation towards the processes of reading. Self-perception positively affects reading achievement (Morgan & Fuchs, 2007) and is also considered to be an important predictor of reading achievement (Retelsdorf, Köller, Möller, 2011). When students perceive themselves as able readers, they respond to challenges during reading by applying effective strategies, persistently coping with difficulties and constructing meaning and remaining engaged in problem solving (Castle, 1994; Chapman, Tunmer, & Prochnow, 2000; Guthrie & Wigfield, 2000; Henk & Melnick, 1995; Retelsdorf, Köller, Möller, 2014; Shang, 2010). In contrast, students who doubt their own reading competence are likely to manifest a poor self-image by approaching a difficult reading task as a threat to be avoided rather than a challenge (Bandura, 1989, 1995; Vacca, Vacca, & Mraz, 2013). Readers with poor self-perception may give up easily and become frustrated during reading. In addition, these readers generally dwell on their deficiencies and approach a reading situation without a sense of purpose and fail to monitor their reading activities (Johnston & Winograd, 1985). As a consequence, they attempt to either avoid reading or procrastinate during reading (Schunk, 1989; Vacca & Padak, 1990; Vacca, Vacca, & Mraz, 2013). Needless to say, self-perception is important to reading effort and achievement.

Self-image contributes to students' ability to read. Deeds (1981) and Chiu and Klassen (2009) emphasized that reading teachers must firmly believe in the important role that self-perception plays in the processes of learning to read if they are to promote students' reading success. Aside from the critical role in a learner's overall reading development, self-perception also plays an important role in an individual's effort to learn to read in a foreign language (Cohen & Norst, 1989). Cohen and Norst (1989) proposed

that individuals who have low perception of their competence in performing foreign language reading tasks are very unlikely to have effective control of their linguistic ability. Thus, the concept of self-perception is strongly linked to the amount of effort individuals use to perform a task and achieve their goals (Bandura, 1989).

In addition to the influence self-perception has on reading in a first language, self-perception is also hypothesized to influence the ability to read in a foreign language as well (Cohen & Norst, 1989; Walker, 2015). Self-perception is strongly linked to the amount of effort learners use to read in a foreign language (Bandura, 1989; Walker, 2015). To enhance EFL readers' self-perception, teachers should support their students' success in reading English by guiding them in the selection of reading materials commensurate with their interests and reading levels (Schunk, 1991). EFL teachers should also vary tasks and assignments, provide the students with effective reading strategies through modeling, demonstration and guided practices (Schunk, & Zimmerman, 1997), and revise grouping techniques which encourage cooperative learning (Henk & Melnick, 1992, 1995; Henk, Marinak, & Melnick, 2012; Schunk, & Zimmerman, 1997). Experiencing success consequently raises learners' positive self-perception (Bandura, 1981, 1989; Schunk, 1984, 1991; Schunk, & Zimmerman, 1997). When students are able to handle reading tasks, the reading event will be less stressful and the students are more likely to experience success (Henk & Melnick, 1995; Scott, 1996). In contrast, encountering failure lowers the learners' self-perception (Bandura, 1981, 1989). When learners believe that success is possible due to their own abilities, they will attempt other endeavors on similar tasks (Weiner, 1972, 1979; Weiner et al., 1971).

In order to help teachers best help EFL students to perceive themselves as capable readers, they need reliable sources from which to gain insights about how students perceive their reading abilities. This information will better enable teachers to develop instructional plans designed to improve students' self-perception and reading success.

To date, there is no suitable measure to determine reader self-perception for EFL college readers. Existing self-perception scales or self-esteem scales measure achievement globally rather than reading achievement (Boersma et al., 1979). In addition, those existing scales such as the one by Gambrell and her associates (1996) address very few items concerning a specific measure of reader self-perception. The Reader Self-Perception Scale (RSPS) developed by Henk and Melnick (1995) and the Reader Self-Perception Scale 2 (RSPS2) (2012) are intended to elicit information from primary grade and secondary grade native readers respectively, rather than EFL college readers. Due to the lack of an existing measure appropriate for use with EFL readers, there is clearly a need to develop an appropriate scale. The objectives of this study were twofold: (1) to develop and field-test a scale to determine self-perception for readers of English as a foreign language; and (2) to study the relationships between EFL readers' self-perception and reading achievement.

METHOD

Research questions

Two substantive research questions were addressed in this study as follows:

1. Does the Self-Perception Scale for Readers of English as a Foreign Language (SPSREFL) represent Bandura's self-efficacy theory?
2. What is the relationship between self-perception and reading achievement for EFL learners?

Participants

Six hundred and eighteen Thai college freshmen at a university in Thailand participated in the study. The majority of the participants were in the fields of science and technology. Males constituted 25% and females 75% of the sample. Approximately 44 percent had 9-12 years of experience in learning English; 23.9% had over 13 years; and 30.4 % had 5-8 years. The average Grade Point Average (GPA) was 2.14 (SD = .61); 40.9% fell within a range of 0.29

- 2.00; 53.6% in a range of 2.03 - 3.00; and less than 5% in a range of 3.03 - 4.00. The Nelson-Denny Reading Test was administered to survey the participants' English reading ability. The results revealed that their grade equivalent scores on the reading test ranged from 4.1 to 6.8 (mean = 4.1, SD = 0.12). Their standardized scores ranged from 129 to 169 (mean = 139.8, SD = 4.78). It can be concluded that the participants' English ability is not adequate enough to make use of English resources at the college level. At the time of the study, these participants enrolled in English I, an EFL course designed specifically for students having background in the science fields.

Instruments

Nelson-Denny Reading Test (Form G)

The Nelson-Denny Reading test was used to survey students' reading ability in reading English. According to Sweetland and Keyser (1986), the Nelson-Denny Reading Test is used to measure participants' achievement and progress in reading comprehension, vocabulary development and reading rate for students in grade 9 and above. The range of reliabilities for the comprehension subtest was 0.75 - 0.82; and 0.89 - 0.95 for the vocabulary subtest. For the reading rate subtest, the reliabilities range from 0.62 - 0.82 (Hambleton, 1985).

Student Information Questionnaire

The Student Information Questionnaire was developed to gather information about the participants' gender, experience in learning English as a foreign language, experience in English speaking countries, their pleasure reading, academic reading and their accumulative Grade Point Average (GPA).

Questionnaire Development and Administration

The construction of the Self-Perception Scale for Readers of English as a Foreign Language (SPSREFL) followed the guidelines and procedures described in Henk and Melnick's study (1992). Those steps are: (1) defining theoretical constructs; (2) selecting a

scaling technique; (3) validating both construct validity and content validity of items; (4) preparing drafts of the scale and gathering data; and (5) analyzing the data (using statistical techniques).

The preliminary item pool of 40 items was generated based on Bandura's theory of perceived self-efficacy (1977a, 1981, 1995). Some of the items were adapted from Henk and Melnick's Reader Self-Perception Scale (1995). The items of the SPSREFL were designed to elicit information about EFL students' self-perceived competence in reading English texts. The items were used to assess four specific dimensions of reader self-perception corresponding to the four dimensions of self-efficacy theory (Bandura, 1977a, 1981, 1995). The first dimension is Progress (PR) which refers to how the students perceive their present reading performance compared with their past performance. The second source, Observational Comparison (OC), refers to how the students perceive their reading performance in relation to their peers' reading performance. The third source, Social Feedback (SF), refers to direct or indirect reactions about their reading ability perceived from their teachers and peers. The final source, Physiological States (PS), includes their body symptoms and their internal feelings occurred before, during or after reading.

In addition, notions of grammatical knowledge (Sinatra & Dowd, 1991; Geva, 1992; Tzung-yu, 1993; Wilkinson & Patty, 1993), reading speed, vocabulary and meaning, comprehension strategies and metacognitive knowledge (Paris, Lipson & Wixson, 1983; Grant, 1993, 1994; Rinehart, Stahl & Erickson, 1986; Carrell, Pharis & Liberto, 1989) were taken into account when the SPSREFL was developed.

The preliminary pool of items was tested in two levels in order to validate the measure.

The first level of validation: The preliminary pool of 40 items was reviewed by 4 professors in the field of reading education, 3 professors in TESOL (Teaching of English to Speakers of Other Languages), 1 professor having expertise in the theory of self-perception and 2 doctoral students in reading education. These experts were asked to critique items from their areas of expertise.

Using a five point Likert Scale (5=Strongly Agree, 4=Agree, 3=Undecided, 2=Disagree, and 1=Strongly Disagree), those experts judged the degree to which each item captured its theoretical constructs (OC, SF, PR, or PS).

Following data collection, each item was analyzed for its goodness of fit within the intended constructs. For an item to be retained, it was rated by the experts as to whether it belonged to the expected construct, and the confidence level for the item needed to meet or exceed 3.5 (on a scale of 1 to 5). Any items not meeting the criteria were revised based on the experts' comments.

The second level of validation: The second level of validation followed the procedure used by Henk and Melnick (1992, 2009, 2012). Ten graduate students in reading education and eleven graduate students in TESOL were asked to sort the 40 items into one of four possible categories: Progress (PR), Observational Comparison (OC), Social Feedback (SF), and Physiological States (PS). Those choices which corresponded to the four dimensions of self-perception theory included: (1) I can read and comprehend English text now (PR); (2) I read better than my classmates (OC); (3) My classmates or my teachers think I am a good reader (SF); and (4) I feel nervous when I am reading an English text (PS). Those 4 categories were provided for each item. In addition, those graduate students also were asked to rate how strongly they felt each item belonged to the category they had chosen by using a 5-point scale (5=Strongly Agree, 4=Agree, 3=Undecided, 2=Disagree, and 1=Strongly disagree).

Each item was analyzed for its goodness of fit within the intended category. At the second level of validation, an item was retained when the interrater agreement level reached 70%, and the confidence level for each item met or exceeded 2.5.

The final version of the SPSREFL consisted of 36 items: (1) 9 items capturing the observational comparison aspect; (2) 7 items measuring the social feedback aspect; (3) 12 items measuring the progress aspect; (4) 7 items measuring the physiological states; and (5) 1 item measuring the overall self-perception (See Appendix A).

Due to the overall low performance of the participants on the Nelson-Denny Reading Test (mean = 139.81, SD = 4.78), the SPSREFL was translated into their native language. The translated version was subsequently reviewed by a Thai professional translator to check the accuracy and clarity. The content of the SPSREFL in the English language is consistent with that in Thai.

The participants were given the Nelson-Denny Reading test to survey their reading ability in English and also were asked to fill out the Student Information Questionnaire. Previously, the homeroom EFL teachers translated the Student Information Questionnaire into Thai in order to facilitate the participants' completion of the questionnaire. Then, they were asked to complete the Thai version of the SPSREFL. The students were told to read each statement on the SPSREFL carefully and to check the letter (e.g. SA for strongly agree, A for agree, U for undecided, D for disagree and SD for strongly disagree) that showed how much they agreed or disagreed with the statement. They were encouraged to ask questions about any aspect of the scale they did not understand and were also informed that the results obtained from the scale would not affect their academic record and that their privacy would be protected.

FINDINGS

The SPSREFL Scale and Bandura's Self-Efficacy Theory

To develop and field-test a self-perception scale for EFL readers, analyses of the 35 items on the SPSREFL scale were performed. The SPSREFL scale was developed to tap 4 theoretical constructs: Progress, Observational Comparison, Social Feedback, and Physiological States. Because some items (Items 14, 23, and 28) on the revised version of the SPSREFL convey negative words (e.g. worried, tired and nervous), those items were reverse-coded. In other words, those items containing the negative words were coded as follows: 1 = Strongly Agree, 2 = Agree, 3 = Undecided, 4 = Disagree, and 5 = Strongly disagree.

Exploratory factor analyses were performed to determine the dimensionality of self-perception for EFL readers (Kline, 1994). These analyses also provided an empirical basis for reducing the

many variables to a few factors by combining variables that are moderately or highly correlated with each other (Coakes, Steed, & Ong, 2009). A principal component factor analysis with varimax rotation was undertaken for the thirty-five items. After extraction, the researcher had to decide how many factors to retain for rotation. Field (2000) suggested that the number of factors retained depends on the number of factors with the eigenvalues greater than one in the analysis (Guttman-Kaiser's criterion). Therefore, the fact that four eigenvalues were greater than one suggests a four-factor solution.

Table 1: Factor Loadings by Scale–Observational Comparison

Factor 1: Observational Comparison (OC)	Factor Loadings	Eigenvalue	Cronbach's Alpha
1. I can read English faster than my classmates.	.576	5.91	.90
4. When I read an English text, I can understand it better than my classmates.	.637		
7. I seem to know more English vocabulary than my classmates.	.514		
12. I am better at applying grammatical knowledge to help me understand what I am reading than my classmates.	.565		
17. I seem to be better than my classmates at drawing conclusions from what I am reading.	.580		
20. I read more English materials than my classmates.	.482		
25. When I read, I can identify the author's purpose (i.e. to give information, to persuade or to entertain) better than my classmates.	.452		

31. I can understand the main ideas of what I am reading better than my classmates.	.663		
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Table 2: Factor Loadings by Scale-Social Feedback

Factor 2: Social Feedback (SF)	Factor Loadings	Eigenvalue	Cronbach's Alpha
2. My classmates think I read English materials well most of the time.	.716	3.636	.84
8. My English teacher thinks I am a good reader.	.721		
11. My classmates tend to expect me to get a good grade on my reading assignment or reading test.	.695		
16. My classmates think I am a good reader of English.	.825		
24. My classmates like to listen to me talk about what I have read from English texts.	.576		
27. I often get good comments on my reading assignments from teachers.	.696		
32. My English teachers think my reading is fine.	.790		

Table 3: Factor Loadings by Scale-Progress

Factor 3: Progress (PR)	Factor Loadings	Eigenvalue	Cronbach's Alpha
3. I can apply grammatical knowledge of English to help me understand what I read better than I could before.	.672	3.382	.91
13. I can figure out meanings of unknown words better than I could before.	.765		
15. When I read an English text now, I don't have to try as hard as I used to.	.679		
18. When I read, I need less help than I used to.	.720		
19. I am getting better at reading English.	.806		
21. When I fail to understand what I am reading, I now know what I should do to help me to understand better.	.511		
22. Reading English is easier for me now than it used to be.	.776		
26. I can read English materials faster than I could before.	.796		
29. I can tell when I do or do not understand what I am reading now better than I used to.	.690		
30. I can now apply reading strategies (e.g. using headings, reviewing a summary section, making use of charts and graphs to answer my	.589		

questions, making predictions, summarizing, etc.) to help me understand what I am reading.			
33. I read English materials better now than I could before.	.787		
35. Reading English materials is not so difficult for me now.	.720		

Table 4: Factor Loadings by Scale–Physiological States

Factor 4: Physiological States (PS)	Factor Loadings	Eigenvalue	Cronbach's Alpha
5. I feel relaxed when I read English materials.	.788	3.382	.84
6. I enjoy reading any English materials (i.e. novels or magazines).	.781		
9. Reading an English magazine or novel makes me feel happy.	.841		
10. I am comfortable when I read English materials.	.787		
23. I feel tired when I must read English texts.	.663		
28. Reading English materials makes me nervous.	.656		

The theoretically derived items fit in with the proposed construct. The one-factor solution was the most satisfactory and the most desirable inasmuch as those items could be represented by one proposed construct (Kline, 1994). Tables 1, 2, 3 and 4 indicated that the items in each table had the highest loadings on one factor, as proposed. All of the items proposed loaded on a particular factor, with factor loadings greater than .40 which many researchers such

as Wigfield and his colleagues (1995, 1996) used as a cutoff point in making their decision to retain items. In addition, each analysis, except the Physiological States, has only one eigenvalue greater than one, confirming that one factor described the scale, as proposed.

Cronbach's Alpha Internal Reliabilities

Internal consistency reliabilities provided an indicator of the extent to which the items on each proposed dimension were coherent (Check & Schutt, 2012). The Cronbach's alpha of each dimension-Observational Comparison, Social Feedback, Progress, and Physiological States-was computed. Tables 1, 2, 3 and 4 showed the Cronbach's alpha of .90, .84, .91 and .84, respectively. These results indicated that the reliabilities of those scales are very high and the items on those scales are strongly correlated.

Item-Total Correlation

Item-total correlations were performed for each proposed dimension to assess the extent to which each item on a scale correlates with the total score on that scale. The results showed that the range of the item-total correlation on this scale is .53-.69, suggesting that the items have moderate to strong positive correlations with the total scores on the proposed scales.

Based on the factor analyses and the item-total correlations, most of the items best define their own constructs. The reliabilities of the scales are also very high.

Relationship Between EFL Readers' Self-Perception and Reading Achievement

To investigate the relationship between self-perception for EFL readers and achievement, data from the SPSREFL scale were correlated with the students' achievement data.

Table 5: Relationship Between EFL Readers' Self-Perception and their Academic Achievement

Dimension of Self-Perception	Grade of English Subject	English Exam	Reading Test
Observational Comparison	.28**	.24**	.16**
Progress	.26**	.23**	.14**
Physiological States	.30**	.28**	.16**
Social Feedback	.32**	.29**	.23**
General Perception	.20**	.17**	.11*

* $p < .05$; ** $p < .01$

An examination of the Pearson product-moment coefficients in Table 5 yields the correlations of the various Self-Perception Scales to the number of achievement variables. The self-perception scales have positive and significant correlations with other achievement variables such as the students' grades on the EFL course, their final exam scores on the EFL course and their reading achievement scores derived from the Nelson-Denny Reading Test. Those correlations range in size from .11 to .32.

Table 6: Regression of Students' Achievement Variables on the SPSREFL Scales

Academic Achievements	Predictor	Beta Weights	R square	Adjusted R sq.
Grade of English	OC	.091	.141*	.132*
	PR	.018		
	PS	.179		
	SF	.227		
	GE	-.087		
English Exam	OC	.066	.116*	.107*
	PR	.014		
	PS	.186		
	SF	.211		
	GE	-.097		

Reading Test	OC	.061	.060*	.050*
	PR	-.009		
	PS	.076		
	SF	.199		
	GE	-.065		

* $p < .05$

For further assessment, the relationship between Self-Perception for EFL readers to students' achievement and foreign language reading achievement were investigated by regressing achievements on the self-perception for EFL readers. The predictor variables (Progress, Observational Comparison, Social Feedback, Physiological States and General Perception) were entered into the regression equation for each criterion variable (Grade of the EFL course, Final exam scores, and the reading test scores). The results of the regression analyses are presented in Table 6. The self-perception scales accounted for between 6% and 14% of the variance in the students' achievement: 6% of the variance in the Nelson-Denny Reading Test scores; 12% in the final exam scores of the EFL course; and 14% in the grade of the EFL course. The self-perception scales especially the Physiological States, the Social Feedback and the General Perception are good predictors of student achievements. The Physiological States scale and the Social Feedback scale positively predicted the students' achievement, indicating that students with higher scores on the self-perception scales had higher grades on the EFL course, higher scores on the final exam of the EFL course and on the reading test.

General Perception negatively predicted the students' achievements, indicating that those EFL students with higher scores on the General Perception scale tended to have lower grades and lower scores on the EFL course and lower scores on the reading test. In considering the beta weights across the achievements, the Social Feedback scale was the strongest predictor for nearly all of the achievements. The Progress scale, as opposed to the Social Feedback, was the weakest predictor for all achievements.

DISCUSSION

Bandura (1977a, 1981, 1995) defined four underlying theoretical constructs of self-perception: performance achievement, vicarious experiences, persuasion and bodily symptoms. Bandura (1977a, 1981, 1995), Schunk (1991) and Walker (2015) also revealed the impact of self-perception on academic achievement including reading in a second or foreign language. This study not only confirms those theoretical constructs for self-perception but also extends the information to how those self-perception scales relate to EFL readers' academic achievement and foreign language reading achievement. The following sections discuss the findings organized around the two research questions.

EFL Readers' Self-Perception and Bandura's Self-Efficacy Theory

Findings from this study reveal four constructs of self-perception for reading English as a foreign language. The findings are consistent with the underlying constructs proposed by Bandura (1977a, 1981, 1995) as well. The Self-Perception Scale for Readers of English as a Foreign Language (SPSREFL) developed in this study satisfies a number of validation criteria and shows good internal consistency reliabilities. A variety of analyses suggest that the SPSREFL scale is a valid and reliable measure, and that the different dimensions of self-perception for reading a foreign language can be measured reliably using the scale. Such analyses as Cronbach's internal reliabilities and item-total correlations indicate that all items on each proposed dimension are coherent. The analyses also show that all the items do load on the proposed scale.

Nonetheless, based on the factor analyses and the reliability analyses of the separate sets of items, it might be more meaningful to treat the different dimensions as separate. Individual scales provide different aspects of information about EFL readers' self-perception. As proposed earlier, the intention here is to use the SPSREFL scale as a diagnostic measure, so the information obtained from each scale will help EFL adjust their instruction methods to best fit EFL students' needs.

Relationship Between EFL Readers' Self-Perception and Achievement and EFL Reading Achievement

As proposed by many researchers (Alvermann & Guthrie, 1993; Barkley, 2006; Bottomley, Henk, & Melnick, 1997/1998; Henk, Marinak, & Melnick, 2012/2013; Pajares & Valiante, 1997; Retelsdorf, Köller, Möller, 2014; Scott, 1996; Shell, Colvin, & Bruning, 1995), self-perception impacts on students' academic achievement and reading achievement. The relations of readers' self-perception to academic achievement were an issue to be investigated in this study. The correlational analyses displayed positive correlations which were in the low range. Those correlations included all of the scales-Observational Comparison, Progress, Physiological States, Social Feedback and General Perception, and achievements such as students' grade on the EFL course, their achievement in reading and writing English as shown on their final exam and their reading achievement as shown on the Nelson-Denny Reading Test scores. The correlations appeared to approach statistical significance. The nonsignificant and low relation between the self-perception scales and the Nelson-Denny Reading Test scores can be explained. In the case of the low correlation between the scales and the reading achievement on the Nelson-Denny Reading Test scores, it is likely that this reading test was not adequately sensitive to measure these EFL students. The test itself also has constraints on measuring readers' higher-order thinking skills because of its format (Frederiksen, 1984; Stiggins & Conklin, 1992). The format of multiple-choice questions could not measure higher-order skills of EFL readers such as their uses of reading strategies to solve reading problems, their analytic thinking and their ability to organize relevant information (Stiggins & Conklin, 1992).

In addition, it is very likely that this group of students had limited command of the English language. Thus, they could not perform well on the reading test. This could possibly affect the correlation coefficient between the reading scores and the self-perception scores.

These conditions could possibly account for the low relationship between the scales and the reading achievement.

However, the significant correlation coefficients between the SPSREFL scales and the students' grades on the EFL course and between the scales and their final exam scores reveal a relationship between the EFL readers' self-perception and their academic achievements.

The results demonstrated that the SPSREFL scales are significant predictors of EFL students' English grades, their final exam scores and their reading achievement test scores. If considered across the achievement variables, the Physiological States scale and the Social Feedback scale are the most consistent positive predictors. The most consistent negative predictor was the General Perception scale.

These results provide interesting information about the scales which need to be further examined. One of the most consistent negative predictors was the General Perception scale. The negative relations between the General Perception scale and the achievement variables indicate that EFL students who scored higher on this scale tended to score lower on the achievement measures. This finding was very surprising. It was expected that the relations of the scale to the achievement variables would be positive. It is possible that such a factor as students' linguistic ability in the target language comes into play. This particular group of students appeared to have inadequate command of the English language. This could cause them to misinterpret information from their reading even though they may possess relatively high self-perception. Another surprising finding is that the Social Feedback scale appeared to have the highest predictability of the EFL students' achievements. According to Bandura (1977a, 1995) and Shunk (1991), performance-based information typically has a stronger effect on self-efficacy than other information such as that acquired vicariously and that acquired from persuasory sources. Thus, the Progress scale should have had higher predictability than the other scales, according to Bandura (1977a, 1995), but this was not the case. It might be the case that their strong sense of efficacy in performing foreign language reading has not been developed. Their failure in reading English may have considerable impact upon their judgement and may lead them to

believe that their own performance offers the least reliable guide for assessing their efficacy (Shunk, 1991). If so, those students would have been more likely to base their judgement on information acquired from their teachers or peers, instead. Furthermore, the findings obtained from the regression analyses corroborated the earlier finding that the SPSREFL scale is a reliable predictor of the students' achievement.

It is important to address the limitation of the study. This study was conducted with a somewhat unique sample of EFL students who possessed a limited command of English. The participants of the study were not fully representative of EFL readers. The sample of the study did not include EFL students with different English proficiencies. Since the self-perception scale is meant to be used for gathering information about an individual's perception of competence in reading a foreign language task, the information will help teachers best design instruction and provide EFL students with appropriate reading materials, accordingly. Then, the sample of this study is the main target which the SPSREFL is meant for. Besides, the sample of the study was large. These could outweigh the limitation.

In conclusion, the Self-Perception Scale for Readers of English as a Foreign Language represents well the four theoretical constructs of Bandura's self-efficacy theory (1977a, 1981, 1995). The SPSREFL scale is also a reliable measure. Those constructs do relate to students' achievement in learning to read a foreign language.

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Appendix A

The Self-Perception Scale for Readers of English as a Foreign Language

Listed below are statements about reading English as a foreign language. Please read each statement carefully. Then check the letter that shows how much you agree or disagree with the statement. Use the following:

SA = Strongly Agree

A = Agree

U = Undecided

D = Disagree

SD = Strongly Disagree

		Statements	SA	A	U	D	SD
OC	1	I can read English faster than my classmates.					
SF	2	My classmates think I read English materials well most of the time.					
PR	3	I can apply grammatical knowledge of English to help me understand what I read better than I could before.					
OC	4	When I read an English text, I can understand it better than my classmates.					
PS	5	I feel relaxed when I read English materials.					
PS	6	I enjoy reading any English materials (i.e. novels or magazines).					
OC	7	I seem to know more English vocabulary than my classmates.					
SF	8	My English teacher thinks I am a good reader.					
PS	9	Reading an English magazine or novel makes me feel happy.					
PS	10	I am comfortable when I read English materials.					
SF	11	My classmates tend to expect me to get a good grade on my reading assignment or reading test.					

		Statements	SA	A	U	D	SD
OC	12	I am better at applying grammatical knowledge to help me understand what I am reading than my classmates.					
PR	13	I can figure out meanings of unknown words better than I could before.					
PS	*14	I am worried about what my classmates think about my reading when I read English texts.					
PR	15	When I read an English text now, I don't have to try as hard as I used to.					
SF	16	My classmates think I am a good reader of English.					
OC	17	I seem to be better than my classmates at drawing conclusions from what I am reading.					
PR	18	When I read, I need less help than I used to.					
PR	19	I am getting better at reading English.					
OC	20	I read more English materials than my classmates.					
PR	21	When I fail to understand what I am reading, I now know what I should do to help me to understand better.					
PR	22	Reading English is easier for me now than it used to be.					
PS	23	I feel tired when I must read English texts.					
SF	24	My classmates like to listen to me talk in Thai about what I have read from English texts.					
OC	25	When I read, I can identify the author's purpose (i.e. to give information, to persuade or to entertain) better than my classmates.					
PR	26	I can read English materials faster than I could before.					
SF	27	I often get good comments on my reading assignments from teachers.					
PS	28	Reading English materials makes me nervous.					

		Statements	SA	A	U	D	SD
PR	29	I can tell when I do or do not understand what I am reading now better than I used to.					
PR	30	I can now apply reading strategies (e.g. using headings, reviewing a summary section, making use of charts and graphs to answer my questions, making predictions, summarizing, etc.) to help me understand what I am reading.					
OC	31	I can understand the main ideas of what I am reading better than my classmates.					
SF	32	My English teachers think my reading is fine.					
PR	33	I read English materials better now than I could before.					
OC	34	I learn from reading English texts more than my classmates do.					
PR	35	Reading English materials is not so difficult for me now.					
GE	36	I think I am a good reader of English materials.					

Note. Items with an asterisk were deleted in the revised version of the SPSREFL