The Reliability Test on Psychological Instrument of SESRS, SEPRS and SETRS in Assessing Students' Self-Efficacy. Advantages To Students, Parents and Teachers.

Norlizah Binti Matshah, Razima Hanim Osman, Patricia Joseph Kimong, Carmella E.Ading, Ben Anderson anak Melai, Murnizam Hj Halik, Hon Kai Yee
Fakulti Psikologi dan Pendidikan, Universiti Malaysia Sabah

ABSTRAK

Self-efficacy is about a person’s belief in his or her ability to perform certain behaviors in order to attain expected outcomes (Weiten, 2010; Bandura, 1995). The purpose of this study was to determine the reliability of the Self-Efficacy Student Report Scales (SESRS), Self-Efficacy Teacher Report Scales (SETRS) and Self-Efficacy Parent Report Scales (SEPRS). This pilot study involved 82 respondents consisting of 38 secondary students aged 13 to 17 years old, 38 parents of the students either father or mother and 6 classroom teachers of the students from SMK Pekan, Telipok, Tuaran. The result showed that overall participants' responses to the items based on the categories provided (students, teachers and parents) were reliable due to the coefficient level were within the acceptable values, which was higher than \( r = .50 \). This study also examined the consistency of four self-efficacy constructs between the two studies. Although some of the subscales in the instruments did not reach higher than \( r = .50 \) however, the consistency of the instruments was still significantly consistent between the 2 periods of time based on test-retest reliability (Pearson) coefficient. Based on the findings, SESRS and SEPRS correlates significantly \( r = .50 \), and also between SEPRS and SETRS, \( r = .36 \). This means that these instruments have internal consistency in measuring the same construct. So it is an advantage if the concept of self-efficacy can be based not only on the subject’s own perception but from others’ point of view especially from the teachers and parents. This can develop a comprehensive understanding of one’s self-efficacy thus helping the children not to overestimate or underestimate their level of self-efficacy. Thus, this will give advantage to students, teachers as well as the parents.

Key words: Student's Self-efficacy, Reliability, SESRS, SETRS, SEPRS
INTRODUCTION

Self-efficacy is about a person’s belief in his or her ability to perform certain behaviors in order to attain expected outcomes (Weiten, 2010; Bandura, 1995). It is important for a person to have the skills or abilities in executing certain tasks; however, having the conviction in his or her abilities to successfully perform is the crucial part of human functioning. Positive self-efficacy is crucial for children in order for them to develop a good expectation for themselves and to achieve the desired outcomes. Previous studies showed that children with high self-efficacy persevere longer, report lower levels of anxiety and have a positive relationship with self-esteem (Multon, Brown and Lent, 1991; Erford, Duncan and Savin-Murphy, 2010). It is important for them to have positive self-efficacy in themselves as it will guide them to become more confident in taking challenges and open up to learn new things.

As children said to be our most valuable asset, thus any detection on their potentials either negative or positive should be given priority and early detection on these matters help much in finding the best intervention in assisting this young generation. However, this detection is hindered by a lack of screening tools that accurately identify self-efficacy as what we normally have are only taken at the individual level without involving the parents and the teachers. According to Bandura (1995), social persuasion and evaluative feedback from parents, peers and teachers can change the children’s confidence thus it was one of ways that strengthen children’ beliefs that they have what it takes to succeed (Joet, Usher and Bressoux, 2011). So it is an advantage if the concept of self-efficacy can be based not only on the subject’s own perception but from others’ point of view. This can develop a comprehensive understanding of one’s self-efficacy thus helping the children not to overestimate or underestimate their level of self-efficacy.

Furthermore, academic self-efficacy beliefs relate positively to academic performances, achievements, and efforts (Multon et al., 1991), including those for middle school students (Britner & Pajares, 2006; Pajares, Britner, & Valiante, 2000). The strength of one’s self-efficacy during middle school is important. Those with higher levels are likely to succeed now and are better prepared for later academic and vocational challenges (Zimmerman, 2000). In contrast, those with lower levels are likely to do less well academically now and later and to display other difficulties (e.g., antisocial behaviors) (Bandura, 1997; Hoigaard, et al., April 7, 2014). Therefore, by knowing the self-efficacy of the students and children will be of an advantage to both teachers and parents as they can use the information to plan something as to improve on the students’ or children’s self-efficacy.

Moreover, teachers are encouraged to use more than one assessment method to collect accurate evidence of student learning (Nitko, 2001; Stiggins, 2005). Nitko (2001) also emphasized that the assessment should match the learning targets and provide meaningful feedback to the students. Therefore, this may add to the lists of reliable instruments that can be used by teachers to evaluate on their students. Furthermore, as part of student academic motivation, self-efficacy has gained increased credence in classroom assessment research as a valuable student outcome to be improved (McMillan & Nash, 2000). On the other hand, students’ perceptions of assessment tasks are determined in part by the teacher’s assessment practices in the classroom, which, in turn, activate students’ beliefs about their self-efficacy in the performance of the tasks (Brookhart, 1997; McMillan & Workman, 1998 In Alkharusi, Aldhafri & Alnabhani, 2014). Due to this, it is then important to have the student's self-efficacy be evaluated on the perceptions of the teacher.

Investigations of this kind are particularly important because students' academic self-efficacy has been shown to predict cognitive engagement and academic achievement in a variety of educational settings (Artino Jr, 2012). As such, the ultimate goal of the present study was to produce a psychometrically sound instrument that educators particularly teachers and parents can use to make reliable inferences.
Research Objectives
The main objective of this research is to test the reliability of Self-Efficacy Self-Report Scale (SESRS), Self-Efficacy Teacher-Report Scale (SETRS) and Self-Efficacy Parent-Report Scale (SEPRS).

METHODOLOGY

Respondents
There were 82 respondents involved in this study, which consists of 3 categories:

i. 38 were secondary students (age 13 – 17 years old)
ii. 38 were the parents of the students (either father or mother)
iii. 6 were the classroom teachers

Instruments
This study was using the survey method where questionnaires were distributed to the respondents. There were 3 sets of questionnaires designed for students, parents and teachers in assessing the concept of self-efficacy of the students. In each of the questionnaire, there were 3 parts that need to be completed by the respondents which were:

<table>
<thead>
<tr>
<th>Part</th>
<th>Questionnaire for Student</th>
<th>Questionnaire for Teacher</th>
<th>Questionnaire for Parents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part B</td>
<td>Self-Evaluation Scale-Self (SESS)</td>
<td>Self-Evaluation Scale-Teacher (SEST)</td>
<td>Self-Evaluation Scale-Parents (SESP)</td>
</tr>
<tr>
<td>Part C</td>
<td>Disruptive Behavior Rating Scale – Self (DBRSS)</td>
<td>Disruptive Behavior Rating Scale – Teacher (DBRST)</td>
<td>Disruptive Behavior Rating Scale – Parents (DBRSP)</td>
</tr>
</tbody>
</table>

These questionnaires can be individual or group administered and easily scored in less than 30 minutes. Each of the questionnaires has 82 items based on the 3 instruments:

a. SESR, SETRS and SEPRS consist of 19 items with four subscales designed to measure correlated facets of self-efficacy (perseverance, procrastination, self-confidence and achievement efficacy).
b. SESS, SEST and SESP consist of 28 items with four subscales designed to measure correlated facets of self-esteem (physical self-esteem, family relationships self-esteem, peer relationships self-esteem, academic self-esteem).
c. DBRSS, DBRST and DBRSP consist of 35 items with five subscales designed to measure correlated facets of disruptive behaviors (inattention, hyperactivity/ impulsivity, antisocial conduct, oppositional, and anxiety).

Research Procedures
The first procedure was the translation processes of the instruments using back to back translation method proposed by Brislin (1970). The second procedure was to seek permission from the Ministry of Education as this study need the participation from teachers and students from secondary school. Apart from that, consent of the parents to participate in this research was also required. The fourth procedure was the key-in processes and data analysis.

Test-Retest Reliability Procedures
These 3 sets of questionnaires were administered to students, teachers and parents (N = 82) and then administered again after 14 days (2 weeks later). Standard scores for each administration were used to compute test-retest reliability (Pearson correlation) coefficients.
**Data Analysis**
The data will be analyzed using Statistical Packages for Social Sciences (SPSS) version 19.0 for Windows.

**RESULTS**

**Inferential Statistics**

**Reliability**
The 14-day test-retest reliability (Pearson) coefficients and coefficients Cronbach’s alpha of 3 instruments (SESRS, SEPRS and SETRS) and also each of the subscales for the student, parents and teacher responses are presented in the following Table.

Table 1: **Reliability Coefficients for Student Responses to the SESRS from Study 1 and Study 2.**

<table>
<thead>
<tr>
<th></th>
<th>Study 1, α (n = 38)</th>
<th>Study 2, α (n = 38)</th>
<th>( r_{tt} ) (n = 38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SESRS Total Score</td>
<td>.79</td>
<td>.80</td>
<td>.65</td>
</tr>
<tr>
<td>Perseverance</td>
<td>.50</td>
<td>.45</td>
<td>.42</td>
</tr>
<tr>
<td>Procrastination</td>
<td>.42</td>
<td>.29</td>
<td>.53</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>.64</td>
<td>.70</td>
<td>.42</td>
</tr>
<tr>
<td>Achievement Efficacy</td>
<td>.49</td>
<td>.49</td>
<td>.51</td>
</tr>
</tbody>
</table>

Note: SESRS= Self-Efficacy Self-Report Scale. 
\( \alpha = \) Cronbach’s coefficient alpha 
\( r_{tt} = \) test-retest reliability (Pearson) coefficient

Based on Table 1, students’ response to the SESRS items were reliable in terms of its internal consistency and test-retest reliability. Total score of SESRS \( \alpha = .79 \), for Study 1, \( \alpha = .80 \), and test-retest reliability is \( r_{tt} = .65 \).

Table 2: **Reliability Coefficients for Student Responses to the SEPRS from Study 1 and Study 2.**

<table>
<thead>
<tr>
<th></th>
<th>Study 1, α (n = 38)</th>
<th>Study 2, α (n = 38)</th>
<th>( r_{tt} ) (n = 38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPRS Total Score</td>
<td>.82</td>
<td>.89</td>
<td>.53</td>
</tr>
<tr>
<td>Perseverance</td>
<td>.57</td>
<td>.68</td>
<td>.55</td>
</tr>
<tr>
<td>Procrastination</td>
<td>.40</td>
<td>.74</td>
<td>.28</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>.65</td>
<td>.62</td>
<td>.40</td>
</tr>
<tr>
<td>Achievement Efficacy</td>
<td>.47</td>
<td>.68</td>
<td>.57</td>
</tr>
</tbody>
</table>

Note: SEPRS= Self-Efficacy Parents-Report Scale. 
\( \alpha = \) Cronbach’s coefficient alpha 
\( r_{tt} = \) test-retest reliability (Pearson) coefficient

Based on Table 2, parents’ response to the SEPRS items were reliable in terms of its internal consistency and test-retest reliability. Total score of SEPRS \( \alpha = .82 \), for Study 1, \( \alpha = .89 \), and test-retest reliability is \( r_{tt} = .53 \).

Table 3: **Reliability Coefficients for Student Responses to the SETRS from Study 1 and Study 2.**

<table>
<thead>
<tr>
<th></th>
<th>Study 1, α (n = 6)</th>
<th>Study 2, α (n = 6)</th>
<th>( r_{tt} ) (n = 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SETRS Total Score</td>
<td>.94</td>
<td>.94</td>
<td>.85</td>
</tr>
<tr>
<td>Perseverance</td>
<td>.85</td>
<td>.81</td>
<td>.87</td>
</tr>
<tr>
<td>Procrastination</td>
<td>.77</td>
<td>.89</td>
<td>.84</td>
</tr>
<tr>
<td>Self-confidence</td>
<td>.78</td>
<td>.65</td>
<td>.68</td>
</tr>
<tr>
<td>Achievement Efficacy</td>
<td>.79</td>
<td>.67</td>
<td>.79</td>
</tr>
</tbody>
</table>

Note: SETRS= Self-Efficacy Teacher-Report Scale.
α = Cronbach’s coefficient alpha

$r_{tt}$ = test-retest reliability (Pearson) coefficient

Based on Table 3, teachers’ response to the SETRS items were reliable in terms of its internal consistency and test-retest reliability. Total score of SETRS $\alpha = .94$, for Study 1, $\alpha = .94$, and test-retest reliability is $r_{tt} = .85$.

Table 4 shows on the correlation among SESRS, SEPRS and SETRS. There was a significant correlation between SESRS and SEPRS which showed $r = .51$. Apart from that, there was also a significant correlation between SEPRS and SETRS which showed $r = .36$. However, there was no significant correlation between SESRS and SETRS.

Table 4: Correlation among SESRS, SEPRS and SETRS.

<table>
<thead>
<tr>
<th>Instruments</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SESRS</td>
<td>-</td>
<td>.51*</td>
<td></td>
</tr>
<tr>
<td>2. SEPRS</td>
<td>.13</td>
<td>-</td>
<td>.36*</td>
</tr>
</tbody>
</table>


* $p \leq .05$  ** $p \leq .01$

**DISCUSSION**

These 3 instruments: Self-Efficacy Student-Report Scales (SESRS), Self-Efficacy Parent-Report Scale (SEPRS) and Self-Efficacy Teacher-Report Scale (SETRS) can be used in order to assess comprehensively the level of self-efficacy: from student’s own perspective, teachers’ and parents’ perspectives on the student's/child's self-efficacy. Apart from that, all of these three instruments measured four important components which are perseverance, procrastination, self-confidence and achievement.

Perseverance is considered as one of self-efficacy construct where people who have a strong belief in his or her own ability in achieving desired outcomes would have a stronger resistance in pursuing what he or she wants. This can be seen in a study done by Hong (2006) where those who had higher self-efficacy more often displayed greater task perseverance at a more difficult time. Procrastination is the second self-efficacy construct where people who do not believe in his own ability would tend to delay doing tasks and this was proven by a study which showed those who has stronger self-efficacy reported less procrastination (Haycock, McCarthy and Skay, 1998). The third construct is self-confidence where people who have higher levels of self-efficacy showed confident in his ability to perform any behavior. The fourth construct is achievement. Those who are confident in his ability to perform tend to have higher achievement and this was proven in a study done by Tan, Ang, Klassen, Yeo, Wong, Huan and Chong (2008) where participants who have high self-efficacy in learning would expect for higher academic performance. Based on the previous studies, it is therefore important to look at these four important components (perseverance, procrastination, self-confidence and achievement) which can help us (teachers, parents, counselors) to understand better on the students’ beliefs in their own capabilities to perform and achieve the desired outcomes in their lives.

Based on the findings, overall participants’ responses to the items based on the categories provided (students, teachers and parents) were reliable due to the coefficient level were within the acceptable values, which is higher than $r = .50$. This study also looked at the consistency of four self-efficacy constructs between the two studies. Although some of the subscales in the instruments did not reach higher than $r = .50$ however, the consistency of the instruments is still significantly consistent.
between the 2 periods of time based on test-retest reliability (Pearson) coefficient. Based on the findings, SESRS and SEPRS correlates significantly \( r = .50 \), and also between SEPRS and SETRS, \( r = .36 \). This means that these instruments have internal consistency in measuring the same construct.

It is worth noting, however, that consistent with the theoretical underpinnings of self-efficacy, an assumption can be made that the relationship between students' self-efficacy and their actual medical skills capabilities (or competence) is reciprocal. That is, self-efficacy beliefs and actual competence likely grow and develop together, with increasing competence helping to grow self-efficacy and increasing self-efficacy helping to develop competence. And although medical educators are understandably focused on teaching students’ essential knowledge and skills, results from more than 30 years of self-efficacy research indicate that simply possessing knowledge and skills does not ensure students will be motivated to apply them when needed. Instead, medical students likely need both "the skill and the will" to successfully function in dynamic clinical contexts. Therefore, Bandura and others have suggested that teachers should consider employing instructional practices that not only develop competence but also promote the growth of the necessary accompanying self-efficacy. In medical education, more research is clearly needed to explore the veracity of such a pedagogical approach (Artino, Jr et al., 2012).

As Bandura hypothesized that self-efficacy beliefs influence an individual's choice of activities, effort, and persistence. People who have low self-efficacy for accomplishing a specific task may avoid it, whereas those who believe they are capable are more likely to become engaged. Moreover, individuals who possess higher levels of self-efficacy are hypothesized to put forth more effort and persist longer in the face of difficulties than those who are uncertain of their capabilities. The tendency for efficacious people to put forth more effort and persist longer is critically important because most personal success, and particularly success in medicine, require persistent effort and prolonged, deliberate practice." As such, low self-efficacy becomes a self-limiting process. In order to succeed, then, individuals need resilient self-efficacy beliefs to meet the unavoidable obstacles of life in (Artino, Jr et al., 2012).

CONCLUSION

Owing to the above discussion, as a teacher and parents, it is then become an utmost important to ensure that our children's self-efficacy be monitored. Once, we know their level of self-efficacy through a reliable test then further proper planning suiting the needs of the students can be planned. Teachers may outline activities that may help in increasing or improve the students' self-efficacy. The same goes with parents, they should also need to help out in improving or monitor their children's self-efficacy.

Furthermore, Social persuasions and evaluative feedback from parents, teachers, and peers can alter students’ confidence. Younger students who eagerly await evaluative judgments from significant others may be most impressionable by what others tell them (Bandura, 1997). Feedback that is catered to students’ skill development can be particularly helpful in building self-efficacy (Hattie & Timperley, 2007). On the other hand, disparaging comments by trusted others can leave students with a bruised sense of efficacy (Pajares, 2006).

So as to parents, children are the greatest gifts from god and it is to our utmost respect to give the best to our children. The same goes with the teachers, each and every one of us should carry our responsibilities with integrity. Only a person with integrity will definitely having a noble personality inclusive of being trustworthy, honest, patience, genuine, responsible, etc. With these qualities, we may produce a solid society which in turn will help to provide a better world for us to stay safe and sound. Last but not least, to all teachers and parents, to get our job and responsibilities done in maximum best and sound ‘believable’, a reliable instrument is needed and the primary purpose of this study is to produce a psychometrically sound psychological test in measuring students’ self-efficacy. Hopefully, with this instrument, we may know the needs of our young generation better and therefore provide a promising activities to help them grow healthily and successfully.
REFERENCES


