FEA Tool Final Project

The Revised Two-factor Study Process Questionnaire: R-SPQ-2F

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IDE712 Analysis for Human Performance Technology Decisions
Overview

This tool is a survey designed to evaluate the learners’ learning approaches, in order to improve instructional effectiveness, staff development (Biggs, 2001) and promote deep learning in the classroom. The tool is intended to be conducted through a questionnaire with 20 items on a 5-point Likert scale (see Appendix).

Background

Where did it come from?

The Revised Two-factor Study Process Questionnaire (R-SPQ-2F) was developed from the Study Process Questionnaire (SPQ) (Biggs, 1987a) and its school-level companion, the Learning Process Questionnaire (LPQ) (Biggs, 1987b). All these surveys are based on the ‘student approaches to learning’ (SAL) theory that learners are engaging in two different types of learning approaches: surface-level or deep-level processing (Marton & Säljö, 1976), also known as surface learning and deep learning. The SPQ was developed from an earlier 10-scale Study Behaviour Questionnaire (SBQ), conceived within an information-processing framework (Biggs, 1976). Besides the original two approaches of Marton and Säljö, the SPQ yielded three approach scores, surface, deep, and achieving respectively, with a component motive and strategy score for each approach (Biggs, 2001).

Then with further study and findings, there appears to be a need for a shorter two-factor version of the SPQ which addresses deep and surface approaches only and can be conducted quickly and easily by a regular teacher for use in monitoring
teaching contexts (Biggs, 2001). In developing R-SPQ-2F, the original items from the deep and surface scales of the SPQ were examined and revised, with a better understanding of extrinsic motivation and the insights into approaches to learning gained from the intensive study of the approaches of Asian students (Kember, 1996).

**What and who is it for?**

The R-SPQ-2F was designed to evaluate the learning approaches of students, quickly and easily by a regular teacher, with the objective of monitoring teaching contexts, including:

1. Teachers monitoring their teaching from class to class, or following some innovation in teaching or assessment in an action research design.
2. An outcome measure of teaching in more formally structured research.
3. Suggesting to staff developers where teachers or departments may need help.
4. Diagnosis of students with study problems, by comparing individuals’ deep and surface scores of themselves or with others.
5. Examining the relationship of approaches to learning with other curriculum variables.
6. Quality assurance exercises to monitor students’ perceptions of courses on a class or department basis.

(source of materials: Biggs, 2001)

**In what context does it apply?**

Teaching and assessment methods used to encourage a surface approach that allowed students to get a good mark on the basis of memorizing facts instead of
understanding and applying knowledge, whereas the generic aim of good teaching is precisely to encourage students to adopt a deep approach. Therefore, facing the situations that most students in undergraduate courses become increasingly surface and decreasingly deep in their orientation to learning, the R-SPQ-2F was originally designed with the objective of understanding whether and how much the deep learning is promoted by teaching methods and learning environments in higher education.

**Purpose**

The primary purpose of the R-SPQ-2F is to identify the learners’ current learning approach preference. With the understanding of whether and how much the deep learning is promoted by practical teaching methods and learning environments, the instructors can better design their courses.

This tool could be utilized as a Front-End Analysis (FEA) tool to determine, prior to a course’s implementation, if the learning content or course design needs to be modified given the students’ learning approach preference. For example, if most of the students use surface approach, the instructor should teach simple concepts at the beginning. Since deep learning approach should be promoted, the instructor could design some activities later to stimulate learners’ motivation and to practice their higher-order thinking skills gradually.

On the other hand, the tool could be used in the evaluation process of FEA, in order to understand if the training or treatment works. For example, if an instructor
wants to utilize flipped classroom to promote deep learning in his or her class, this tool could be used to gather information about the pre- and post- situation of students’ learning approaches, to see if and to what extent the flipped classroom promotes deep learning.

**Application and Evaluation**

**Usage**

Since the R-SPQ-2F was designed to evaluate the surface and deep learning approaches of students in higher education, the instructor needs to hand out the survey either in paper or online for students to fill in. The items are given in 5-point Likert scale with A infers ‘*never or only rarely true of me*’ and E infers ‘*always or almost always true of me*’. After having collected the data from the students, the instructor transformed the item scores into main scale scores or subscale scores according to the guide (see Appendix).

When conducting FEA, this tool could be used to gather information about the current situation of students’ deep learning level, so that the instructional designer could figure out the gap between the real and ideal output. If the purpose is to understand the relationship between learning approaches and other variables such as academic achievement or student engagement, other relative information needs to be collected accordingly. If the purpose is to measure the effect of an instructional innovation on students’ learning approaches, the survey needs to be conducted at least twice to the same group of participations with a reasonable time interval.
Assumption

As described above, the R-SPQ-2F was originally developed for higher education. However, nowadays not only higher education, but also K-12 education pays attention to students’ comprehensive competencies, for example the 21st century skills emphasize cognitive skills like critical thinking. And the New Pedagogy of Deep Learning (NPDL) has defined deep learning as the process of acquiring six global competencies: character, citizenship, collaboration, communication, creativity and critical thinking (Fullan, 2018). Thus, this tool could be modified to be utilized in any educational context that hopes to achieve deep learning rather than surface learning. Actually, it has a parallel version, the Revised Two-factor Learning Process Questionnaire (R-LPQ-2F), that could be used in schools (Kember, 2004).

Example of Application

A research on the relationship of learning approaches and academic achievement in full-time and part-time sub-degree Hong Kong Chinese students has been made with the R-SPQ-2F (Chan, 2014). 130 full-time students in a business diploma program and 131 part-time sub-degree students of the same program participated in that study. Their learning approaches were measured with the R-SPQ-2F and the academic achievement was examined with their Grade Point Average (GPA). Regression analysis was performed in which the R-SPQ-2F score served as the dependent variable and GPA score as independent variable in order to test the predictability of academic achievement. The results showed that the influence of learning approaches on academic achievement appeared to be modest, and there was
no statistically significant difference between full-time and part-time students in relation to their learning approaches.

Although the link between learning approaches and academic achievement is modest, in the discussion part the author pointed out that the same student might adopt different learning approaches in different learning environment, thus instructors should pay attention to elements that influence learning approaches, including overloaded curriculum, study pressure and the format of assessments. In other words, deep approach is likely to be encouraged by students’ intrinsic interests in learning materials, a well-resourced learning environment and an appropriate workload.

However, GPA score is only one variable that account for academic achievement and depends on how it is assessed. And learning approaches and academic achievement may form a complex interrelationship rather than a single direct correlation. Further research could be made with larger sample size and more indicators of academic achievement such as job prospect.

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http://eds.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&sid=59624c1b-40db-4408-8479-115404f2e549%40sdc-v-sessmgr06

Advantages

As a survey of 20 items, the R-SPQ-2F is less time-consuming than its original version, which makes the process of evaluation quicker and easier for any regular teacher. Its validity and reliability has been examined in various environments (Kember, 2004; López-Aguado & Gutiérrez-Provecho, 2018; Fryer, Ginns, Walker, &
Nakao, 2012; Stes, De Maeyer, & Van Petegem, 2013), thus its measurement on learning approaches is quite reliable and valid.

In addition, this tool could be applied to a broad range of educational environments. Even it is originally designed for higher education, it has a version for K-12 education: R-LPQ-2F. Besides, it adapts to various purposed from simply measuring learners’ learning approaches, to examining the relationship between learning approach and other learning variables; from monitoring the instruction or innovative pedagogies to giving suggestions to the professional development of instructors. Therefore R-SPQ-2F could be implied in many researches.

**Disadvantages**

Like all other self-report surveys, one disadvantage of the R-SPQ-2F is that participants may report a less objective situation of themselves, making them look good even though the survey is anonymous. Self-report survey might also be biased by participants’ feelings at the time they fill out the questionnaire.

Another disadvantage is that this tool only provides quantitative data which is highly context-based (Stes, De Maeyer, & Van Petegem, 2013). If a research wants to examine the influence of an innovation in educational environment on learners, more qualitative data might need to be gathered via interviews or observations.

**Conclusion**

The R-SPQ-2F was initially developed to examine the learners’ learning approaches, in order to improve instructional effectiveness, staff development and promote deep learning in the classroom. When utilized in the Front-and-End Analysis,
this tool can provide valuable information about the current learners’ learning approach, so that the instructional designer could modify the course content and activities according to different learning approaches. The tool can also be utilized in the evaluation of the training or other treatment for the FEA, to see if and to what extant the treatment has promoted deep learning.
Reference


Kember, D., Biggs, J., & Leung, D. Y. P. (2004). Examining the multidimensionality of approaches to learning through the development of a revised version of the


### Revised Study Process Questionnaire (R-SPQ-2F)

Pleasing fill in the appropriate blank alongside the items. The letters alongside each item stand for the following response.

- **A**- This item is *never or only rarely* true of me
- **B**- This item is *sometimes* true of me
- **C**- This item is true of me about *half the time*
- **D**- This item is *frequently* true of me
- **E**- This item is *always or almost always* true of me

<table>
<thead>
<tr>
<th>N.</th>
<th>Statement</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>I find that at times studying gives me a feeling of deep personal satisfaction.</td>
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<td>2</td>
<td>I find that I have to do enough work on a topic so that I can form my own conclusions before I am satisfied.</td>
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<td>3</td>
<td>My aim is to pass the course while doing as little work as possible.</td>
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<td>4</td>
<td>I only study seriously what’s given out in class or in the course outlines.</td>
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<td>5</td>
<td>I feel that virtually any topic can be highly interesting once I get into it.</td>
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<td>6</td>
<td>I find most new topics interesting and often spend extra time trying to obtain more information about them.</td>
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<td>7</td>
<td>I do not find my course very interesting so I keep my work to the minimum.</td>
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<td>8</td>
<td>I learn some things by rote, going over them until I know them by heart even if I do not understand them.</td>
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<td>9</td>
<td>I find that studying academic topics can at times be as exciting as a good novel or movie.</td>
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<td>10</td>
<td>I test myself on important topics until I understand them completely.</td>
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<tr>
<td>11</td>
<td>I find I can get by in most assessments by memorizing key sections rather than trying to understand them.</td>
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<td>12</td>
<td>I generally restrict my study to what is specifically set as I think it is unnecessary to do anything extra.</td>
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<td>13</td>
<td>I work hard at my studies because I find the material interesting.</td>
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<td>14</td>
<td>I spend a lot of my free time finding out more about interesting topics which have been discussed in different classes.</td>
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<td>15</td>
<td>I find it is not helpful to study topics in depth. It confused and wastes time, when all you need is a passing acquaintance with topics.</td>
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<td>16</td>
<td>I believe that lecturers shouldn’t expect students, to spend significant amounts of time studying material everyone knows won’t be examined.</td>
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<td>17</td>
<td>I come to most classes with questions in mind that I want answering.</td>
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<td>18</td>
<td>I make a point of looking at most of the suggested readings that go with the lectures.</td>
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<td>19</td>
<td>I see no point in learning material which is not likely to be in the examination.</td>
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<td>20</td>
<td>I find the best way to pass examinations is to try to remember answers to likely questions.</td>
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The response to items are scored as follows:

A=1, B=2, C=3, D=4, E=5

To obtain main scale scores add item scores as follows:

DA (deep approach) =1+2+5+6+9+10+13+14+17+18
SA (surface approach) =3+4+7+8+11+12+15+16+19+20

Subscale scores can be calculated as follows:

DM (deep motivation) =1+5+9+13+17
DS (deep strategy) =2+6+10+14+18
SM (surface motivation) =3+7+11+15+19
SS (surface strategy) =4+8+12+16+20