



## Relationship between styles of formative assessment and the student learning experience

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### Abstract

This study examined the influences of different aspects of the formative assessment and students' learning experience, in terms of their enjoyment, understanding, and perceived usefulness. Two classes of students in their first year in business management school, having different styles of formative assessments: difference in the numbers and relationship between teacher and student. Positive correlations were found among different aspects of the teacher–student relationship, the quantity of assessments, and the students' learning experience, particularly between the instructor's engagement of the students and the students' learning experience. The relationships between the number of assessments and the different aspects of the students' learning experience were significant, but weaker than the relationships between the different aspects of the teacher–student relationship and the students' learning experience. These findings underscore the influence of the instructor, especially the instructor's encouraging the students to complete assessments, on the students' learning experience.

**Keywords:** Formative Assessment, Student Learning Experience, Teacher–Student Relationship

### Introduction

Formative assessment can refer to a tool or program carried out during the instructional process for the purpose of improving teaching and providing feedback and correctives at each stage of the teaching–learning process. Scriven (1967) <sup>[30]</sup> described formative assessment as “formative evaluation” of educational programs, noting that the term “assessment” replaced “evaluation” when the object is student learning in the classroom.” (See also Shepard *et al.* 2005) <sup>[31]</sup>. Studies have emphasized the importance of formative assessment for students' grades (Tormey 2014) <sup>[35]</sup>, as well as teachers' well-being, student's well-being, and students' engagement and achievement (Panikarova *et al.* 2021 <sup>[25]</sup>; Tormey 2014 <sup>[35]</sup>; Weurlander 2011) <sup>[36]</sup>. Formative assessment includes peer review (self and public), student participation, student engagement, a Formative assessment involves several important elements: the relationship between the teacher and student, whether the teacher initiates interaction or passively reacts to questions from the students, how often the teacher gives formal or informal feedback with or without grades, the ways in which the students receive feedback, the educational outcome of course assessments(s), and the number of assessments given during the semester (Birenbaum *et al.* 2015 <sup>[4]</sup>; Pellegrino 2018) <sup>[26]</sup>.

In this study, we choose to focus on the number of authentic assessments and measure the teacher–student relationship (TSR), whether the instructor was more proactive or reactive, the instructor's encouragement of the students, and whether the instructor gave both grades and verbal feedback or only grades.

These elements were chosen in light of the importance of personal interaction and process for customer satisfaction with services provided by organizations (Khan *et al.* 2020) <sup>[14]</sup> like banks (Supriyanto, Wiyono, and Burhanuddin 2021) <sup>[33]</sup>, hospitals (Nguyen and Duong 2021) <sup>[24]</sup>, hotels (Sofi *et al.* 2020) <sup>[32]</sup>, and institutions of higher education (Ma, Liu, and Li 2022; Li, Bergen, and Olsen 2022).

### Number of assessments

The number of assessments refers to the number of times during the semester that students are asked to perform tasks (i.e., formal graded tasks or informal, non-graded ones). Assessments help students to negotiate and access university learning and achievement (Lavy 2015) <sup>[18]</sup>, and enhance student achievements and their participation especially in distance learning (Kingston and Nash 2011 <sup>[17]</sup>; Taylor 2008) <sup>[34]</sup>.

Few studies have indicated the optimal number of assessments, but there is a consensus in the literature that the more assessments the teacher assigns, the more effective the learning will be, in terms of high scores, and that higher achievement (Gijsselaers and Schmidt 1995 <sup>[11]</sup>; Rivkin and Schiman 2015) <sup>[29]</sup>. A greater number of assessments over the course of a semester will lead to more interaction between the instructor and the students.

### The teacher–student relationship (TSR)

The teacher–student relationship (TSR) is another important component of formative assessment. TSR refers to different aspects of the role of the educator and the role of the learner. The interaction, empathy, engagement, demonstration, and explanation provided by the instructor encourage students to work harder, as the instructor mentors the students, initiates interactions and inspires the students to ask questions (Kincade, Cook, and Goerdts 2020 <sup>[16]</sup>; Robinson 2022, Li Xintong, 2022) <sup>[28]</sup>.

In this study, we focused on the effects of the instructor being proactive or reactive in interactions with students. We examined the effects of the instructor giving only grades or grades plus additional verbal feedback to the students and the effect of the instructor encouraging the students to practice by emphasizing the importance and advantages of doing of the assessments.

### Student learning experience (SLE)

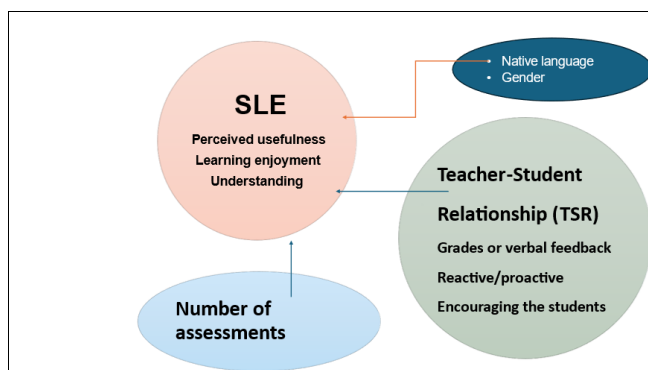
The student learning experience is made up of a set of formal and informal factors, including quality of learning, excellence, perfection, fitness for purpose, value for money,

accommodation, minimization of time spent, perceived usefulness, goals of the course, and implementation of the course, as well as enjoyment from the course as students juggle their work with their studies, social life on campus, etc. (Aristovnik 2016 [1]; Buultjens and Robinson 2011 [5]; Dean and Gibbs 2015 [6]; Elfaki, Abdulraheem, and Abdulrahim 2019 [7]; Mason and Weller 2000 [22] The current study focused on the following aspects of the students' experience: 1) enjoyment from the course, 2) the students' understanding of the course material, and 3) students' perceptions regarding the usefulness of the course. Leenknecht *et al*, 2020) [19].

**Study model and hypotheses**

The study model is presented in Fig 1. This study involved three hypotheses.

- **Hypothesis 1:** There is a positive correlation between the number of assessments during the semester and the SLE.
- **Hypothesis 2:** There are positive correlations among different aspects of TSR (i.e., proactive or reactive instructor behavior, encouragement, and grades or grades plus verbal feedback), the number of assessments during the semester, and the different aspects of SLE (i.e., enjoyment, understanding, perceived usefulness of the course).
- **Hypothesis 3:** Neither gender nor native language influences the SLE.



**Fig 1: The study model**

**Materials and methods**

The study was conducted in two first-year courses at the Department of Management at Hadassah Academic College in Jerusalem. The instructors of the two courses employed different approaches to formative assessment. The two classes are described in Table 1.

**Table 1: Study sample**

	Class I	Class II
Number of students	98	91
Number of assessments	2	2-5
Reactive/proactive teacher	Reactive	Proactive
Instructor encouraged the students to do the assessments by explaining the value of the assessments	No	Yes
Feedback	Grades	Grades + verbal feedback

At the end of the semester, the students from both classes completed a questionnaire designed to study their learning experience in terms of their understanding of the course material, their enjoyment of the course, and whether they saw the course as useful. We also asked the participants about their gender (male or female) and their native language (Hebrew or another language).

The questionnaire concludes nineteen items relate the following variables:

- Enjoyment from the learning, enjoyment from the course, the teacher and the method – six items
- Understanding the course, the assessments, the material- seven items
- Perceived usefulness – what is the students trust about implementing the study in real -world scenario and student's perceptions of the study's relevance to the industry." six items.

In total, we obtained 189 completed questionnaires: 91 from Class I and 98 from Class II. The collected data were analyzed using SPSS software.

**Results**

We found a high level of consistency among the three examined aspects of the student learning experience: enjoyment, understanding, and perceived usefulness (Table 2). We also found we found high internal consistency between the three examined aspects of TSR (whether the instructor was proactive or reactive, whether the instructor gave only grades or grades plus verbal feedback, and whether the instructor explained the importance of the assessments; Cronbach's  $\alpha$  coefficients > 0.82; Table 3).

**Table 2: Cronbach's alpha coefficients for the different aspects of the student learning experience (SLE)**

Elements of SLE	Cronbach's $\alpha$	Number of items
Enjoyment	0.745	6
Perceived usefulness	0.852	6
Understanding	0.788	6

**Table 3: Internal consistency among the different aspects of TSR.**

Aspects of TSR	Number of questions	Cronbach's $\alpha$
The teacher is reactive or proactive.	5	0.87
The teacher gives only grades or also verbal feedback.	6	0.95
The teacher explains the importance of the assessments.	5	0.82

The high internal consistency reflects the extent to which the items within SLE and TSR measure various aspects of the same characteristic or construct.

Using Pearson correlations, we found positive, significant relationships between each of the examined aspects of SLE and the number of assessments given during the semester and TSR (Table 4). Each of the aspects of SLE was also positively and significantly correlated with each of the different aspects of TSR (Table 5). In other words, students reported higher levels of enjoyment, understanding, and perceived usefulness the more the teacher was proactive, gave verbal feedback, and encouraged them to do the assessments. As shown in Table 5, whether or not the teacher was proactive was the was the aspect of TSR that was most strongly correlated with each of the aspects of SLE.

**Table 4:** Relationships between different aspects of the student learning experience (SLE) and the number of assessments, and the teacher–student relationship (TSR).

Aspects of SLE	Number of assessments	TSR
Perceived usefulness	.30	.75**
Enjoyment	.22	.80**
Understanding	.20	.61**

\*\* $p < 0.05$ .

**Table 5:** Relationships between aspects of the students’ learning experience (SLE) and aspects of the teacher–student relationship (TSR).

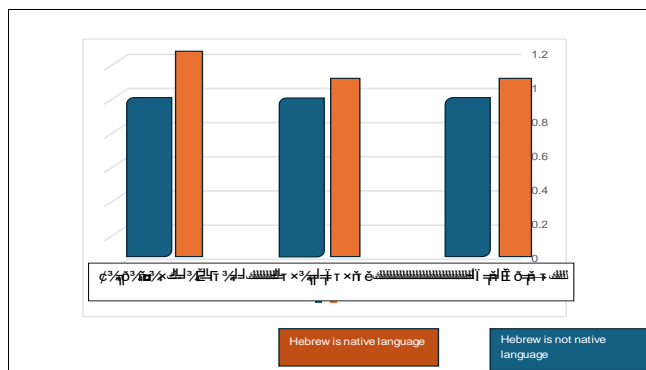
Aspects of SLE	Aspects of TSR		
	Verbal feedback	Encouragement	Being proactive
Perceived usefulness	0.65	0.65	0.89
Enjoyment	0.56	0.42	0.79
Understanding	0.42	0.49	0.76

We also examined the relationships between demographic variables (i.e., gender and native language) and the study variables. No correlations were found between gender and any of the different aspects of SLE (Table 6). However, significant correlations were observed between having Hebrew as a native language and these two measures (Fig 2).

**Table 6:** Scores assigned to different aspects of SLE by male and female participants.

Aspects of SLE	Female		Male		t(df = 79)	P
	SD	M	SD	M		
Understanding	3.53	0.869	3.65	0.531	-0.85	.203
Perceived usefulness	3.21	0.98	3.36	0.98	-0.78	0.217
Enjoyment	3.41	0.865	3.86	0.963	-2.54	.0006

\*\* $p < 0.01$ . \* $p < 0.05$ .



**Fig 2:** Aspects of the student learning experience among students for whom Hebrew was or was not their native language.

**Discussion**

The adoption of formative assessment in higher education has many advantages for the learner, the instructor, and the interaction between them (Barana and Marchisio 2016) [2]. Formative assessment improves teaching and learning simultaneously, encourage students’ self-reflection, helps to maintain clear criteria for good performance, and provides opportunities to close the gap between current and desired performance (Elmahdi, Al-Hattami, and Fawzi 2018) [8]; Frunza 2014 [9]; Jain, Agrawal, and Biswas 2012) [13]. We found a significant correlation between the behavior of the instructor and the students’ understanding of the course

material. As shown in previous studies (Grant 2001 [12]; Mutaqorribain, Asrori, and Rasman 2022 [23]; Pianta, Hamre, and Allen 2012) [27], the more the instructor initiates interaction with the students, shows them empathy, and makes time to answer their questions, the more the students will dare to ask questions or to upgrade their knowledge. Initiating interactions with the students while they are working on assessments or after they have completed those assessments shows that the instructor cares about and is sympathetic to the students and helps students to be more involved in their course.

The personal interaction between service provider and customer is one of the key elements of customer enjoyment. The results of this study highlight the importance of interaction, especially proactive interaction, between instructors and students. The more proactive, positive, and student-focused the teacher is, the more positive the learning experience will be for the student.

Formative assessment is not sufficient if the teacher does not interact with the students, encourage them to do the assessments by underlining the value of those assessments, and provide verbal feedback, not only grades. We can achieve the goals of different assessments and raise student’s performance by teaching them to learn instead of just giving them knowledge.

**Study limitations**

The current study may have some limitations worth considering. The two lecturers whose courses were examined in the study had the same academic background, education, and experience in their field. However, differences between the two instructors, beyond the study variables, may have affected their classroom conduct and teaching methods, which may have affected the study results. In addition, as the two courses had different students, there could be confounding variables affecting the study results, such as differences in the students’ personalities or motivation.

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**Ethical Approval Statement**

An ethical approval was accepted from Hadassa Academic College

**Informed Consent Statement**

The students consent to participate in the study and sign for their approval.

**Data Availability Statement**

The data used in this research are available from the authors upon request.

**Competing Interests**

The authors report there are no competing interests to declare.

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