

FBL: Feedback Based Learning in Higher Education

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Received: August 27, 2015

Accepted: September 8, 2015

Online Published: September 17, 2015

doi:10.5539/hes.v5n5p1

URL: <http://dx.doi.org/10.5539/hes.v5n5p1>

Abstract

The study introduces a new model for higher education called FBL: Feedback Based Learning. It is intended to inform the lecturers regarding the progress of students through online questionnaires covering the whole course curriculum. Using technology, lecturers can make a diagnosis at the end of each main topic to find out if there are difficulties and who need help. The results are received and displayed in real time, allowing for immediate intervention to perform.

Students' attitudes toward FBL have been examined in three courses based on the new model by asking learners to respond to a questionnaire at the end of each course (n=62). The study reveals that the use of the model significantly improved student learning because it allowed to accurately focus on their difficulties.

It was found out that FBL is suitable for a variety of types of content subject courses but it may be particularly appropriate for courses based on a hierarchical structure. In such courses, each subject depends on previous issues and when students accumulate gaps, it may prevent them from understanding the following themes. FBL provides a practical and feasible solution for such cases.

Keywords: FBL, feedback, learning, smartphone, tablet

1. Introduction

The study introduces a new model called FBL: Feedback Based Learning. It is undertaken by gathering student responses via online questionnaires covering the whole curriculum of a content subject course. FBL is designed to change the learning process and adapt it to the extent to which students really assimilate what has been learned. This allows students to regularly inform lecturers in real time what was understood and what is still unclear. On the other hand, lecturers can consistently respond and explain again unclear topics without being dependent on the final exam only. In this way, learning might be improved and academic staff can focus on student difficulties.

1.1 General Background

One of the deepest mysteries in higher education is the well-known phenomenon in which substantial numbers of students come into class with all the prerequisites, but unfortunately, they do not succeed to handle the new coursework (Wilson & Scalise, 2006). Therefore, promoting student learning has become an issue of concern among educationalists all over the world (Elton & Johnston, 2002; Knight & Yorke, 2003a; Marton & Booth, 1997; Marton & Saljo, 1997; Prosser & Trigwell, 2001; Race, 2005; Ramsden, 2000).

Hesse (1989) claims that a usual explanation for students' difficulties is that students are blamed for not studying enough or not being interested. The reason for such problems is usually lack of communication between faculty and students. Such communication is a critical element of higher education and student intellectual growth is quite often dependent upon effective feedback (Felder & Brent, 2004). Burksaitiene (2011) stresses that students' learning in higher education would not be significantly changed until the feedback provided to them would be improved.

A common definition for the term "feedback" in education is as follows:

"Information describing students' performance in a given activity that is intended to guide their future performance in the same or in a related activity" (Ende, 1983, p. 777).

Black and Wiliam (1998) define the term “feedback” in a similar way:

“Any information that is provided to the performer of any action about that performance” (p. 40).

Feedback can have different functions depending on the learning environment, the needs of the learner, the purpose of the task, and the particular feedback paradigm adopted (Knight & Yorke, 2003b; Poulos & Mahony, 2008).

There is a substantial body of research in higher education contexts considering feedback and its importance in student learning. It is seen as a crucial way to facilitate students’ development as independent learners who are able to monitor, evaluate, and regulate their own learning, allowing them to feed-up and beyond graduation into professional practice (Ferguson, 2011). The potential impact of feedback on future practice and the development of students’ identity as learners were highlighted by Eraut (2006). Moreover, it is considered to help students understand the subject being studied and give them clear guidance on how to improve their learning. To Bellon, Bellon and Blank (1991), academic feedback is more strongly and consistently related to achievement than any other teaching behaviour. Yorke (2002) claims that feedback can improve a student’s confidence, self-awareness and enthusiasm for learning.

Student and lecturer dissatisfaction with feedback is well reported. From the student perspective, most complaints focus on the technicalities of feedback, including content, organization of assessment activities, timing, and lack of clarity about requirements (Higgins, Hartley, & Skelton, 2002; Huxham, 2007), and from the lecturer perspective, the issues revolve around students not making use of or acting on feedback; both perspectives lead to a feedback gap.

Although it is widely recognised that feedback is an important part of the learning cycle, both students and faculty members frequently express disappointment in relation to the conduct of the feedback process. Students may complain that feedback on assessment is unhelpful, unclear or they are not given guidance as to how to use feedback to improve subsequent performance. Furthermore, students sometimes note that the feedback is provided too late to be of any use or relevance. For their part, lecturers frequently comment that students are not interested in feedback comments and are only concerned with the mark. Lecturers express frustration that students do not incorporate feedback advice into subsequent tasks (Spiller, 2009). Both perspectives lead to a feedback gap (Evans, 2013).

It is commonly reported that students do not read teacher feedback comments (Duncan, 2007). The literature suggests that a part of the problem is that teachers and students see feedback in isolation from other aspects of the teaching and learning process, and consider it to be primarily a teacher-owned effort (Taras, 2003). Respectively, the literature suggests that the feedback process is most effective when all stakeholders are actively involved in the process (Spiller, 2009).

In order to be effective, feedback should close the gap between students’ actual performance level to what is desired. Unfortunately, such a feedback is not an easy task. To Hattie and Timperley (2007), the most effective feedback relates to specific tasks, whereas general comments such as “needs improvement”, are impractical and do not reach any improvement. Effectively, the measure of good feedback is any information that can help a student close the gap between current knowledge and program desired outcomes (Croton, Willis III, & Fish, 2014).

Although Shute (2008) argued that there is no simple answer as to what type of feedback works and Nelson and Schunn (2009) commented that *“there is no general agreement regarding what type of feedback is most helpful and why it is helpful”* (p. 375), the principles of effective feedback practice are clear within the higher education literature. There is a significant and growing body of evidence of what is seen as valuable. There is general agreement about the importance of holistic and iterative assessment feedback designs (Boud, 2000; Juwah et al., 2004; Knight & Yorke, 2003b).

International research indicates that students respond very well to feedback in digital form. Meta-analysis undertaken by Hattie and Timperley (2007) across more than 7,000 studies, suggests that providing feedback in multimedia forms is of the most effective ways to initiate positive results.

So far, the term “feedback” referred to information provided to students to encourage them to improve their learning. However, there is another type of feedback that may be just as important. Such feedback is transferred from the students to lecturers in order to assist academic staff to change their way of teaching to fit the learners’ needs.

Often it is the students who are the first to notice whether teaching is good or not. Nevertheless, not too many institutions are geared to routinely listening to student insights in an atmosphere that is genuinely welcoming of

such feedback. Although asking students for their feedback on their learning experience at the end of the semester has become common practice in many institutes, it is not always obvious that their views have any actual impact on desirable changes. Higher education institutions need to create environments and feedback mechanisms and systems to allow students' views, learning experience, and their performance to be taken into account (McAleese et al., 2013).

The new FBL model is designed to offer a comprehensive and applicable solution for the important purpose presented by McAleese et al. (2013), highlighting that institutions of higher education have to listen to the students.

FBL provides an effective response based on the fundamental principle of the use of personal smartphones (or tablets/laptops), to answer online questionnaires covering the whole course program. The study, undertaken at the Neri Bloomfield School of Design and Education, intended to examine the effectiveness of the model.

1.2 Description of the FBL Model

FBL intends to significantly improve the learning process of content courses in higher education through feedback provided to faculty from students. This type of feedback is designed to inform the lecturer how each subtopic has been understood and implemented with respect to all students in the course. The main notion is that instructors will respond in real time during the course by explaining again or discussing unclear issues. This kind of reaction may be directed to any student or to the whole class, depending on the prevalence of difficulties. Such a process might be achieved as follows:

- 1) At the end of every main topic, each student answers an online questionnaire covering all the subtopics of the main theme. To do so, the lecturer should prepare an online questionnaire in line with a smartphone screen (not too wide). Such questionnaires can be easily prepared using Google Forms (via the Google Drive) or an equivalent tool.
- 2) The format of a questionnaire relating to each main topic is presented in figure 1.

Topic no. X: (Topic's Name)

To what extent did you understand and assimilate the issues studied in topic number x? (1-Very little, 2-Little, 3-Medium, 4-Much, 5-Very much).

Subtopic	1	2	3	4	5
A					
B					
C					
D					
E					
...					

Additional remarks relating to topic no. x.

If applicable, please specify further comments relating to the learning process of the topic No. x, especially, understanding and assimilation of the material.

Student name: _____

Figure 1. The questionnaire's format

- 3) Students are asked to answer a questionnaire at the end of each main topic via their own smartphones, tablets

or laptops. This way, it is possible to undertake the course in every regular classroom, not necessarily in a computer class.

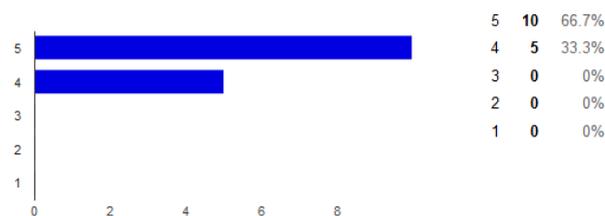
4) Using an application such as Google Forms (or equivalent), allows to project the questionnaires' results to the entire class, immediately after completing the questionnaire ends. In such a way, it is likely to start the discussion on the results without any delay for processing the statistical data. Each subtopic result can include a frequency table combined with a frequency bar chart. Figure 2 presents an example of a questionnaire's result (15 responses concerning two subtopics of the first main theme of a course dealing with management of online courses).

15 responses

[View all responses](#)

Summary

Defintions of the course site [To what extent did you understand and assimilate the issues studied in topic number 1?]



Updating learning units [To what extent did you understand and assimilate the issues studied in topic number 1?]

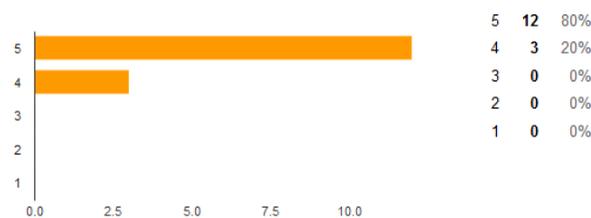


Figure 2. An example of a questionnaire's results

5) The lecturer's reaction to every questionnaire's question (relating to one subtopic), should be based on the following principles:

- If all responses concerning a certain subtopic have the value of 4 or above, no intervention is required whatsoever (relating to the specific subtopic).
- If there are some responses having a value of 3 or below (up to about one tenth of all responses), the lecturer should identify the specific students and give them personal assistance. Identification is quite easy by viewing the main spreadsheet, including students' names relating to each subtopic.
- If there are many responses having a value of 3 or below (more than about one tenth), the lecturer should discuss the particular subtopic again with the whole group until full understanding is reached.

2. Method

2.1 The Study Framework: Examining the FBL Model

Students' perceptions toward FBL were examined during a study undertaken at the Neri Bloomfield School of Design and Education.

The study examined 62 learners who attended the three following courses, which were based on the new model:

- 1) Strategic Management (34): the course consisted of reading texts and was divided into the following nine main topics: introduction, the mission statement, external assessment, internal assessment, strategies in action, strategy analysis and choice, strategy implementation (two main topics) and strategy evaluation. The course was attended by fourth year students during the first semester of 2014-2015 and included four

academic hours per-week.

2) PSPP—statistical software which is equivalent to SPSS (13): it is a computer course including using of statistical routines combined with principles of statistics. The course included the following main topics: introduction, data editor, principles of descriptive statistics, syntax, cases' selection, means, computerized variables, sorting files, data control, T-test, Analysis of Variance (ANOVA), crosstabs, chi square, reliability (Cronbach's alpha), item analysis and factor analysis.

It was attended by third year students during the first and second semester of 2014-2015 (two academic hours per-week).

3) Management of online courses (15): this course is designated to teach lecturers how to manage online courses. It included the following main-topics: learning management system (LMS), computer assisted assessment (CAA), video, audio, text, online synchronous learning and screenshots. The course was attended by lecturers of the Neri Bloomfield School of Design and Education, during the second semester of the year 2014-2015 (three academic hours per-week).

2.2 The Research Questions

The research questions intended to measure the effectiveness of the new FBL model, according to learners' views.

The following research questions were worded:

- 1) Based on learners' perceptions, does Feedback Based Learning (FBL) improve the learning process of courses in higher education?
- 2) To learners' views, what are the other characteristics of such learning and are they correlated with the improvement of the learning process?

2.3 Population and Sample

Population: The population addressed through the study included all higher education students studying in courses based on the new FBL model.

Sample: 62 learners (students and lecturers) at the Neri Bloomfield School of Design and Education, who studied in three courses based on the new model.

Learners were asked to answer a questionnaire at the end of each course undertaken in 2014-2015, concerning their perceptions toward the new model.

The questionnaire was anonymous, and the rate of response was 98.4% (62 out of 63).

2.4 Tools

In order to answer the research questions, a questionnaire, including 19 closed statements and one open ended was prepared. For each question, respondents were requested to mention their views on the following Likert five-point scale:

- 1) Strongly disagree.
- 2) Mostly disagree.
- 3) Moderately agree
- 4) Mostly agree.
- 5) Strongly agree.

The open-ended question was designed to accomplish the main data gathered from the quantitative part of the questionnaire, as follows:

Do you have any other comments? Was FBL helpful for your studying during the course?

2.5 Data Analysis

In order to examine the validity of the questionnaire, the factors' reliability was calculated (Cronbach's alpha). Based on the reliability found, the following four factors were created, as follows:

- 1) *Improvement of the learning process by FBL:* the degree of influence of feedback on learning, the extent of being prepared for the final exam, the ability to better understand the learned material and the creation of significant learning.
- 2) *Diagnosis—identifying learning difficulties:* informing the lecturer about unclear issues, lecturers' ability to

know the students' difficulties, weaknesses and strengths.

- 3) *Sense of belonging and motivation*: the degree of the lecturer's interest in students, influences on motivation to learn and the extent of comfort to contact the lecturer.
- 4) *Prognosis-handling problems*: lecturers' ability to explain unclear issues, stressing common and specific difficulties and matching the pace of the lesson to students' progress.

Table 1 presents all the factors, the reliability (Cronbach's alpha) and the questionnaire's questions composing the factors.

Table 1. Factors and reliability

Factors	Questionnaire's questions
Improvement of the learning process by FBL Alpha=0.872	Using feedback causes me to learn better. Using feedback causes me to be better prepared for the final exam. Using feedback enables me to understand better the taught material. Using feedback causes me to have significant learning.
Diagnosis: identifying learning difficulties Alpha=0.879	The feedback enables me to explain the lecturer which topics I did not understand. The feedback enables the lecturer to know what difficulties I have. The feedback allows the lecturer to know what subjects I am familiar with. The feedback enables the lecturer to know my weaknesses and strengths.
Sense of belonging and motivation Alpha=0.727	The feedback gives me a feeling that the lecturer is interested in me. When the lecturer is interested in my learning, my motivation to study increases. It is important for me that the lecturer will be interested in my learning. Following the feedback, I am more comfortable to contact the lecturer.
Prognosis: handling problems Alpha=0.933	Feedback allows the lecturer to explain unclear issues. The feedback allows to emphasize the difficulties common to most students in the class. The feedback allows to treat certain difficulties even if they are not common to most of the class. The feedback allows the lecturer to address problematic issues while learning. The lecturer can match the lesson pace to students' progress. The feedback allows the lecturer to appropriately treat each student individually. The feedback enabled me to get responses to difficulties I faced.

For each factor, a mean score was calculated (including standard deviation).

The following statistical tests have been undertaken as well ($\alpha \leq 0.05$):

- 1) ANOVA (Analysis of Variance): in order to check significant differences of factors' means between the three courses.
- 2) Paired samples t-test: it was conducted in order to check if there are significant differences between all pairs of factors, relating to the second research question.

3. Results

Students were asked about the four issues mentioned above, characterizing FBL.

There was no significant difference between the three courses concerning the mean scores of all factors examined (T-test, $\alpha \leq 0.05$). It means that there was a replication of the results found in the first course also in the second and the third. It strengthens the findings and gives them more validity. Consequently, table 2 presents the mean scores of all three courses together and the ANOVA test, showing that the differences between the three courses are not significant.

Table 2. Factors' mean scores and standard deviation for all courses together

Research question	Factor	N	Mean	Std. Deviation	ANOVA
1	Improvement of the learning process by FBL	62	4.54	.62	$f_{(61)} = 2.720, p = .104$
2	Diagnosis: identifying learning difficulties	62	4.69	.57	$f_{(61)} = .526, p = .471$
	Prognosis: handling problems	59	4.69	.59	$f_{(58)} = .714, p = .402$
	Sense of belonging and motivation	62	4.51	.59	$f_{(61)} = 2.505, p = .119$

3.1 The First Research Question

The first research question was focused on exploring the hypothesis that FBL improves the learning process in higher education. The first result definitely confirms that assumption, namely, according to learners' views, the factor "Improvement of the learning process by FBL" has a very high score (4.54). The meaning of that finding is that according to learners' opinion (students and lecturers), a course based on the new model has a substantial influence on improving the learning process.

The open-ended question strengthens the closed items relating to the first factor. Learners stress that FBL has a significant positive influence on their learning. The following quotes illustrate this notion:

Students:

"It is very helpful to have feedback in order to inform the lecturer in real time what is understood and what is unclear. In such a way, the instructor can repeat difficult issues until understanding is achieved. FBL definitely improves the whole learning process."

"In my view, feedback has many advantages, the main of which is the important data given to the lecturer concerning the extent of students' understanding. FBL can be especially appropriate for students who need targeting and close monitoring for improving their learning."

Lecturers:

"FBL is extremely useful and significant for learning in large groups because in such classes, it is very difficult for the lecturer to know the exact situation of every student. Nevertheless, it should be helpful in any class size."

"I think that FBL is the right method pedagogically and it is appropriate for learning improvement in higher education."

"In my opinion, FBL is helpful in realizing how students feel concerning their process of learning. Definitely, I will try it in my class. In our course, the method gave us an excellent opportunity to indirectly inform the instructor about our difficulties and it was tremendously helpful. It gave me a feeling that the lecturer is always attentive to our difficulties and I felt comfortable to contact him and ask questions, even though no questionnaire has been given in every lesson. Thus, I am confident that FBL has both direct and indirect positive influence on students' learning."

3.2 The Second Research Question

The second research question intended to find out additional important characteristics of FBL and to examine if they are correlated with the first factor (improvement of the learning process by FBL). According to table 2 (second research question), students rate all the next three FBL's factors with very high scores as well. These factors were ranked as follows: diagnosis: identifying learning difficulties (4.69), prognosis: handling problems

(4.69) and sense of belonging and motivation (4.51).

A paired sample T-test ($\alpha \leq 0.05$) examined all three combinations of pairs relating to these factors. It was found out that there are significant differences among the following two pairs, presented in table 3.

Table 3. Paired samples T-test

Factor	Sense of belonging and motivation (4.51)
Diagnosis: identifying learning difficulties (4.69)	$t_{(58)} = .397, p = .001$
Prognosis: handling problems (4.69)	$t_{(58)} = 3.011, p = .004$

Table 4 presents correlation between the factors of the second research question and the first research question factor (improvement of the learning process by FBL):

Table 4. Second research question factors' correlation with the first research question factor

Factor (2 nd research question)	Pearson Correlation	Significance	N
Diagnosis: identifying learning difficulties	.634	.000	62
Prognosis: handling problems	.637	.000	59
Sense of belonging and motivation	.634	.000	62

The findings mentioned above may provide a possible explanation for a hypothetical influence of these three factors on the improvement of the learning process by FBL. The diagnostic capability of FBL is perceived to be excellent for learners (4.69, table 2) and according to table 4, it has also a high positive and significant correlation with the factor "improvement of the learning process by FBL" (Pearson correlation=.634, $p=.000$). Although correlation is not necessarily a proof of a causal link, it might give an indication of the link between these variables. Similar high positive and significant correlations exist concerning the next two factors presented in table 4 and the factor "improvement of the learning process by FBL" (.637, .634 respectively, $p=.000$). It should be mentioned that a correlation coefficient of .4 or above is considered to be high (Sarid and Sarid, 2006). As mentioned above (table 2), all these factors have got high scores, which means, they are considered to be very successful as well.

4. Discussion

It is common in institutions of higher education that lots of students attending content subject courses, do not really succeed to handle the new coursework (Wilson & Scalise, 2006). There might be a lot of reasons for that phenomenon, one of which is the lecturer's lack of information about students' progress. It is quite frequent that a lecturer goes on, whereas part of the class misses him/her. Further, students begin to accumulate gaps and the phenomenon is getting worse with time. To McAleese et al. (2013), asking students for their feedback on their learning experience at the end of the semester has become common practice in many institutes. Unfortunately, that common practice does not guarantee that students' views will have any impact on practical changes. Usually the instructor might know about these gaps of knowledge, mainly at the end of the semester, after checking the final exams or assignments. At that point of time, it is usually too late to intervene and make a real change. Therefore, higher education institutions need to create environments and feedback mechanisms and systems to allow students' views, learning experience, and their performance to be taken into account (McAleese et al., 2013). FBL allows to comprehensively overcome this kind of difficulty by enabling faculty to consistently monitor student progress and intervene if and when required. Such an intervention might be slowing down, explaining again or stressing difficult issues, trying to explain in different ways and so on. The model's philosophy is based on a real time combination of diagnosis and prognosis undertaken continuously during the learning process. The study reveals that using FBL significantly improves students' learning owing to the ability to precisely focus on their difficulties and by providing a feeling that faculty is interested in student progress.

One of the great advantages of the new model is that it does not necessarily require new expensive means. It depends mainly on smartphones (or tablets/laptops) that are currently held by the majority of the students. Such equipment should be linked to an online questionnaire such as Google Forms (in the Google Drive), which is free of charge. In order to do so, lecturers have to be familiar with the preparation and operation of online

questionnaires. Using FBL might be especially worthy while dealing with mass courses. When there are lots of students in a course, technology can be very helpful for diagnosing students' difficulties so it will be feasible to assist them during the course.

5. Conclusion

The study examined three courses based on FBL. The significant quantitative findings show that learners (both students and lecturers) perceived it as a very effective tool for both diagnosis and prognosis. The qualitative data gathered, strengthens the quantitative part and gives it more validity.

The diagnostic phase includes mapping of students' difficulties and it allows lecturers to proceed to the prognosis, namely, taking care of students' difficulties and misunderstandings. Both phases, should take place separately for each main topic.

It was found out that FBL is suitable for a variety of types of content subject courses but it may be particularly appropriate for courses based on a hierarchical structure. In such courses, each subject depends on previous issues and when students accumulate gaps, it may prevent them from understanding the following themes. FBL provides a practical and feasible solution for such difficulties as well. Moreover, it can mostly accommodate students who need guidance and close supervision to enhance their learning. Because FBL has been found to have a substantial influence on learning improvement, it is recommended to adopt it in institutions of higher education and to conduct a follow-up research. The next study should include more courses and lecturers and is expected to give additional validity to the new model.

References

- Bellon, J. J., Bellon, E. C., & Blank, M. A. (1991). *Teaching from a research knowledge base: A development and renewal process*. Facsimile edition, Prentice Hall, New Jersey, USA.
- Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7-74. <http://dx.doi.org/10.1080/0969595980050102>
- Boud, D. (2000). Sustainable assessment: Rethinking assessment for the learning society. *Studies in Continuing Education*, 22(2), 151-167. <http://dx.doi.org/10.1080/713695728>
- Burksaitiene, N. (2011). Promoting student learning through feedback in higher education. *Societal Studies*, 4(1), 33-46.
- Croton, B., Willis III, J. E., & Fish, J. (2014). *EDUCAUSE Review*. Retrieved August 11, 2015, from <http://www.educause.edu/ero/article/passnote-feedback-tool-improving-student-success>
- Duncan, N. (2007). Feed-forward: Improving students' use of tutor comments. *Assessment & Evaluation in Higher Education*, 32(3), 271-283. <http://dx.doi.org/10.1080/02602930600896498>
- Elton, L., & Johnston, B. (2002). *Assessment in universities: A critical review of research*. York: Learning and Teaching Support Network Generic Centre.
- Ende, J. (1983). Feedback in clinical medical education. *The Journal of the American Medical Association*, 250(6), 777-781. <http://dx.doi.org/10.1001/jama.1983.03340060055026>
- Eraut, M. (2006). Feedback. *Learning in Health and Social Care*, 5(3), 111-118. <http://dx.doi.org/10.1111/j.1473-6861.2006.00129.x>
- Evans, C. (2013). Making sense of assessment feedback in higher education. *Review of Educational Research*, 83(1), 70-120. <http://dx.doi.org/10.3102/0034654312474350>
- Felder, R. M., & Brent, R. (2004). The intellectual development of science and engineering students. Part 2: Teaching to Promote Growth. *Journal of Engineering Education*, 93(4), 280. <http://dx.doi.org/10.1002/j.2168-9830.2004.tb00817.x>
- Ferguson, P. (2011). Student perceptions of quality feedback in teacher education. *Assessment & Evaluation in Higher Education*, 36(1), 51-62. <http://dx.doi.org/10.1080/02602930903197883>
- Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77(1), 81-112. <http://dx.doi.org/10.3102/003465430298487>
- Hesse, J. (1989). *From naive to knowledgeable*. The Science Teacher.
- Higgins, R., Hartley, P., & Skelton, A. (2002). The conscientious consumer: Reconsidering the role of assessment feedback in student learning. *Studies in Higher Education*, 27(1), 53-64. <http://dx.doi.org/10.1080/03075070120099368>

- Huxham, M. (2007). Fast and effective feedback: Are model answers the answer? *Assessment and Evaluation in Higher Education*, 32(6), 601-611. <http://dx.doi.org/10.1080/02602930601116946>
- Juwah, C., MacFarlane-Dick, D., Matthew, B., Nicol, D., Ross, D., & Smith B. (2004). *Enhancing student learning through effective formative feedback*. York, UK: Higher Education Academy Generic Centre.
- Knight, P. T., & Yorke, M. (2003a). Employability and good learning in higher education. *Teaching in Higher Education*, 8(1), 3-16. <http://dx.doi.org/10.1080/1356251032000052294>
- Knight, P. T., & Yorke, M. (2003b). *Assessment, learning and employability*. Maidenhead, UK: McGraw-Hill, Open University Press.
- Marton, F., & Booth, S. (1997). *Learning and awareness*. New Jersey: Lawrence Erlbaum Associates.
- Marton, F., & Saljo, R. (1997). Approaches to Learning. In F. Marton, D. Hounsell, & N. J. Entwistle (Eds.), *The Experience of learning: Implications for teaching and studying in higher education*. Edinburgh: Scottish Academic Press.
- McAleese, M., Bladh, A., Berger, V., Bode, C., Muehlfeit, J., Petrin, T., Schiesaro, A., & Tsoukalis, L. (2013). *Report to the European commission on improving the quality of teaching and learning in Europe's higher education institutions*. Luxembourg: Publications Office of the European Union.
- Nelson, M. M., & Schunn, C. D. (2009). The nature of feedback: How different types of peer feedback affect writing performance. *Instructional Science*, 37(4), 375-401. <http://dx.doi.org/10.1007/s11251-008-9053-x>
- Poulos, A., & Mahony, M. J. (2008). Effectiveness of feedback: The students' perspective. *Assessment and Evaluation in Higher Education*, 33(2), 143-154. <http://dx.doi.org/10.1080/02602930601127869>
- Prosser, M., & Trigwell, K. (2001). *Understanding learning and teaching*. The Experience in Higher Education. Buckingham: SRHE & OUP.
- Race, P. (2005). *Making learning happen: A guide for post-compulsory education*. London: Sage Publications.
- Ramsden, P. (2000). *Learning to teach in higher education*. Vilnius: Aidai.
- Sarid, M., & Sarid, Y. (2006). *The guide for SPSS for windows*. Sarid Institute Publication—Research and Training Ltd (in Hebrew).
- Shute, V. J. (2008). Focus on formative feedback. *Review of Educational Research*, 78(1), 153-189. <http://dx.doi.org/10.3102/0034654307313795>
- Spiller, D. (2009). *Assessment: Feedback to promote learning*. The University of Waikato, New Zealand: Teaching Development Unit.
- Taras, M. (2003). To feedback or not to feedback in student self-assessment. *Assessment and Evaluation in Higher Education*, 28(5), 549-565. <http://dx.doi.org/10.1080/02602930301678>
- Wilson, M., & Scalise, K. (2006). Assessment to improve learning in higher education: The BEAR assessment system. *Higher Education*, 52(4), 635-663. <http://dx.doi.org/10.1007/s10734-004-7263-y>
- Yorke, M. (2002). Academic failure: A retrospective view from non-completing Students. In M. Peelo, & T. Wareham (Eds.), *Failing students in higher education*. Buckingham: SRHE and Open University Press.

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