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Revisiting the learning outcomes debate in the context of student self-assessment of receptive and productive skills

This paper contextualises the learning outcomes debate and presents results of a study of students' perceptions of what they *have learned* after the completion of the course. It is about student self-assessment of subject-specific skills and competences, one dimension of the many learning outcomes a higher education institution gives rise to. The results indicate that a great number of respondents perceive themselves to be prepared, competent, and confident users of English. While, in their perception, they are most confident about understanding the general meaning of a text and about asking questions, they are less confident about writing a short essay, about grammar and the use of tenses. The results of the study also show that the two measures of learning outcomes (self-assessment and objective final exam grades) are not complementary. The issue surrounding learning outcomes and whether there are implications for reforming the course programme and methods of assessment are are also discussed.

Key words: learning outcomes, assessment, programme quality.

1. Introduction

The traditional way of designing study programmes was to start from the content of the course teachers intended to teach, plan how to teach the content and assess students' achievement. With the shift from the "teacher centred" to a "student centred" approach a new approach was evolved. The approach, referred to as an outcome-based approach, focuses on what the students are expected to be able to do at the end of the study. One frequently cited definition of learning

outcomes is that they are statements of what "a learner is expected to know, understand and be able to do after successful completion of a process of learning" (European Communities, 2009, p. 11). Or in other words, learning outcomes are a set of expectations about what skills and knowledge students should acquire during their studies. The focus is on activities attempting to result in mastery of predetermined knowledge, skills and competences which are "at the core of the individual's capacities" and which "enable him to successfully integrate into labour and social life" (Zúñiga, 2002, p. 83). They are thus a crucial factor in designing the study programme.

The concept of "learning outcomes" has only recently entered the Croatian higher education area in the context of the Bologna process, the establishment of the Qualifications Frameworks and the national quality assurance agency request that universities assess institutional effectiveness and student learning. If learning outcomes express what a student with a specific qualification knows, understands and demonstrates, then they are statements of what students are *expected to learn* during their studies. This paper is a small-scale study about students' perceptions of what they *have learned* after the completion of Maritime English 1 course. It is about self-assessment of subject-specific (Maritime English 1) skills and competences. It focuses on students' self-assessment which is important because it measures learning, but it also directs student further learning (Havnes, 2004) as the assessment system defines what is worth learning.

The paper also discusses how learning outcomes drive student learning, teaching, assessment and the design of the study programme, and whether students have the self-assessment abilities. The focus of the study was on the individual student's perception of what he/she had learned in a specific course, but the data may also be used in the assessment of the quality of study programme and the higher education institution.

2. Methods

2.1 The course

The BSc Nautical Studies and Maritime Transport Technology is a three-year study programme. It was developed to educate engineers in nautical studies and maritime transport technology. The programme runs over 90 weeks, and students are awarded 120 ECTS credits. The overall aim of the programme is to prepare the students for a career in the maritime industry.

Maritime English 1 is a core course. The course runs over 15 weeks and it aims to enable students to become proficient in English, developing an appropriate level of fluency and accuracy in using English as a medium of understanding, expression and communication with awareness of stylistic and sociolinguistic variation. The course is delivered through lectures and practical work sessions in class.

2.1.1 Objectives of the course

- to expand students' proficiency in Maritime English and in General English;
- to develop students' competence to understand and interpret information presented in verbal, numerical and graphical form, and also to do the information transfer;
- to make valid inferences from the presented material;
- to develop students' reading skills to enable them to skim the text for the main idea, to scan the text for the specific information, to interpret the text and to deduce the meaning from the context;
- to develop students' listening skills to enable them to understand and apply specific information;
- to develop students' writing skills for a range of writing activities such as taking notes in lectures, writing a short essay, writing short reports developing arguments for and against and interpretation of data;
- to develop students' speaking skills to a level that enables them to use English in everyday and professional environment.

2.1.2 Learning outcomes

Upon the completion of the course the student will have and be able:

1. To demonstrate the four basic language skills: reading, writing, listening and speaking at the B level ("independent user") of the Common European Framework of Reference for Languages (2001).
2. To read, organise and present a short written general or technical article.
3. To give/follow instructions; ask/answer and address questions; participate in a conversation on familiar topics, participate in discussions on professional topics; give opinions in study contexts such as classrooms, tutorials or consultation hours; understand lectures; take notes in lectures; write a short essay; write a short report developing arguments for and against; follow the main points in discussions about professional topics; guess unknown words from the context in which they are spoken.

2.1.3 Grades

The Croatian national grading scheme consists of five grades with numerical equivalents:

outstanding – 5 (*izvrstan*); very good – 4 (*vrlo dobar*); good – 3 (*dobar*); sufficient – 2 (*dovoljan*); insufficient – 1 (*nedovoljan* - fail). The minimum pass grade is sufficient – 2 (*dovoljan*), (Ministry of Science, Education and Sports, 2008).

2.2 Aim

The aim of this small-scale study was to identify student's subjective assessment of what they had learned after the completion of the Maritime English 1 course.

2.3 Problem statements

1. How did students' self-perceived learning outcomes differed according to the skill?
2. How were students' self-perceived learning outcomes related to grades?
3. What were the implications of the measurement of learning outcomes for reforming the course programme and student assessment?

2.4 Sample

In order to conduct assessment of self-perceived learning outcomes, a group of 109 first-year undergraduate students (N=109) were asked to participate in this study. The students were in the first year, first (winter) semester of a three year BSc programme.

2.5 Instrument

To assess three groups of learning outcomes, an instrument was developed to measure students' perceptions of learning outcomes for seven course-related objectives. The study utilised a survey questionnaire (N=22), measuring five dimensions of skills and areas: reading (5 items), writing (3 items), speaking (6 items), listening (4 items) and grammar and vocabulary (4 items). The can-do statements focused on students' perceptions of the degree of their achievement in specific skills and areas in English. The items were guided by the "Common European framework of reference for languages: Learning, teaching and assessment" (2001). The respondents were asked to indicate their agreement with the statements by ticking only one item on a 1-to-5 Likert-type scale (*strongly disagree, disagree, neither agree nor disagree, agree* and *strongly agree*). The scale corresponded to the students' perceived level to which they had achieved a specific type of knowledge and skills in their studies immediately after the end of course, in January 2010. The survey was administered to students in the natural university setting.

2.6 Descriptive statistics

Basic descriptive statistics were used to analyse the perceived degree of knowledge and skill acquisition. Three measures of central tendency were used to express the central point of distribution: the *mean*, the *median* and the *mode*. Standard deviation was used to measure dispersal.

2.7 Limitations of the study

As already explained, the survey questionnaire focused on collecting data pertaining to the self-assessment of what students' had learned in the course. The questionnaire did not use the respondents' sex information. Only four female students took part in the study. Sex was thus seen as response consequence information. Any disclosure of this information would present the threat to the anonymity of the study.

Grades could also not have been reported by the students as the survey questionnaire was administered immediately after the end of course and prior to the final exams. A relationship between a subjective, self-perceived learning outcome by a student and an objective learning outcome measurement cannot thus be claimed. Second, the aim of the study and the sample size used limit any generalisation of the study results. But it may still produce sensitising effect to the issues investigated in this study.

2.8 Terminology

In this paper, from this point on, the following terms are used to refer to: "Self-assessment" as "the process of critically reviewing the quality of ones own performance and provision.", and to a "competence" as "the acquisition of knowledge skills and abilities at a level of expertise sufficient to be able to perform in an appropriate work setting (within or outside academia)." (Analytic Quality Glossary).

3. Results

3.1 Learning outcomes

A total of 109 students (N=109) responded to the survey questionnaire. To carry out analysis of the collected data, the survey questionnaire was divided into five groups: reading, writing, speaking, listening and grammar and vocabulary.

3.1.1 Self-perception of acquired skills

The data show that the respondents mean scores of perceived skills are biased towards receptive skills like reading and listening (see Table 1). The results indicate that reading skills scored highest, the mean is 4.01. We could say that the respondents felt that they had acquired very

good reading skills. Listening, with the mean of 3.84, ranked second. We could further conclude that the respondents agreed that their listening skills were good. Productive skills had the mean scores of 3.66 (speaking) and 3.46 (writing). This means that the respondents perceived their speaking and writing skills to be also good. Grammar and vocabulary ranked lowest with the mean of 2.92. We can say that the respondents neither agreed nor disagreed that they were competent at grammar and vocabulary.

Item	Mean	Std. Deviation	Mode
1. I can understand the main points in a general text	4,11	0,75	4
2. I can understand the main points in my coursebooks	3,98	0,86	4
3. I can understand the main points in the course reading text	3,96	0,85	4
4. I can organise information that I read	3,78	0,89	4
5. I can understand the general meaning of a text	4,21	0,86	5
Reading total	*4,01*		
6. I can take notes in lectures	3,62	0,90	4
7. I can write a short essay	3,45	1,07	3
8. I can write a short report developing pros & cons	3,30	0,99	4
Writing total	*3,46*		
9. I can give instructions	3,34	1,23	3
10. I can ask questions	4,29	0,78	5
11. I can answer questions	4,17	0,85	4
12. I can participate in a conversation on familiar topics	3,72	0,85	4
13. I can participate in discussions on professional topics	3,10	0,93	3

14. I can give my opinion in study contexts such as classrooms, tutorials or consultation hours	3,33	0,98	3
Speaking total	*3,66*		
15. I can understand lectures	4,10	0,77	4
16. I can understand informal conversations about familiar topics	4,06	0,79	4
17. I can follow the main points in discussions about professional topics	3,63	0,87	4
18. I can guess unknown words from the context in which they are spoken	3,56	0,92	4
Listening total	*3,84*		
19. I am familiar with all tenses in English	3,08	1,01	3
20. I understand the use of all tenses in English	2,99	0,97	3
21. I am confident about my grammar	2,93	0,90	3
22. Most of my English sentences are grammatically incorrect	2,68	1,08	3
Grammar & vocabulary total	*2,92*		

Table 1 Descriptive statistics across the analysed self-perception of acquired skills

3.1.2 Mean scores for the self-rated competency regarding all skills Among the assessed skills, some skills scored higher than the others. The mean values of six skills (four receptive and two productive) are above 4.06 (see Table 2). The individual highest mean value is 4.29. This means that the respondents agreed with the statement "I can ask questions". Interesting is

item 22: "Most of my English sentences are grammatically incorrect" which has the lowest mean, 2.68. It means that the respondents neither agreed nor disagreed with the statement.

Skill	Mean
I can ask questions	4,29
I can understand the general meaning of a text	4,21
I can answer questions	4,17
I can understand the main points in a general text	4,11
I can understand lectures	4,10
I can understand informal conversations about familiar topics	4,06
I can understand the main points in my coursebooks	3,98
I can understand the main points in the course reading text	3,96
I can organise information that I read	3,78
I can participate in a conversation on familiar topics	3,72
I can follow the main points in discussions about professional topics	3,63
I can take notes in lectures	3,62
I can guess unknown words from the context in which they are spoken	3,56
I can write a short essay	3,45
I can give instructions	3,34
I can give my opinion in study contexts such as classrooms, tutorials or consultation hours	3,33
I can write a short report developing pros & cons	3,30
I can participate in discussions on professional topics	3,10
I am familiar with all tenses in English	3,08
I understand the use of all tenses in English	2,99
I am confident about my grammar	2,93
Most of my English sentences are grammatically incorrect	2,68

Table 2 Distribution of skills

3.1.3 Distribution of specific skills Most respondents described the acquired skills as "very good" or "excellent" (see Table 3). 44% of the respondents assessed their ability to "understand the general meaning of a text" and to "ask questions" (45.9%) as excellent. If we analyse the lowest grades, we

can conclude that 14.7% of the respondents disagreed with the statement that the majority of their sentences were incorrect.

Mean	Responses in %				
	1	**2**	**3**	**4**	**5**
1. I can understand the main points in a general text	-	2,8	14,7	**51,4**	31,2
2. I can understand the main points in my coursebooks	-	7,3	15,6	**48,6**	28,4
3. I can understand the main points in the course reading text	-	6,4	18,3	**47,7**	27,5
4. I can organise information that I read	-	11,0	20,2	**48,6**	20,2
5. I can understand the general meaning of a text	-	5,5	11,9	38,5	**44,0**
6. I can take notes in lectures	0,9	9,2	33,0	**40,4**	16,5
7. I can write a short essay	3,7	14,7	**33,0**	30,3	18,3
8. I can write a short report developing pros & cons	2,8	20,2	31,2	**35,8**	10,1
9. I can give instructions	9,2	15,6	**27,5**	**27,5**	20,2
10. I can ask questions	-	3,7	9,2	41,3	**45,9**
11. I can answer questions	-	5,5	11,9	**42,2**	40,4
12. I can participate in a conversation on familiar topics	-	7,3	31,2	**43,1**	18,3
13. I can participate in discussions on professional topics	2,8	22,9	**43,1**	23,9	7,3
14. I can give my opinion in study contexts such as classrooms, tutorials or consultation hours	2,8	17,4	**34,9**	33,9	11,0
15. I can understand lectures	-	2,8	16,5	**48,6**	32,1
16. I can understand informal	-	3,7	17,4	**47,7**	31,2

conversations about familiar topics				
17. I can follow the main points in discussions about professional topics	0,9	7,3	34,9	**41,3**	15,6
18. I can guess unknown words from the context in which they are spoken	0,9	12,8	29,4	**43,1**	13,8
19. I am familiar with all tenses in English	4,6	24,8	**36,7**	25,7	8,3
20. I understand the use of all tenses in English	5,5	23,9	**43,1**	21,1	6,4
21. I am confident about my grammar	4,6	26,6	**44,0**	21,1	3,7
22. Most of my English sentences are grammatically incorrect	14,7	28,4	**37,6**	12,8	6,4

Table 3 Distribution of analysed responses

3.2 Grades

The students demonstrated programme level learning outcomes through various assessment methods: assignments and achievement tests (formative) and final exam (summative). The majority of students (51.38%) passed the final exam and successfully completed the course. But they achieved the lowest passing letter grade, E (sufficient). The highest achieved passing letter grade was B (very good), 11.01% of the students.

4. Discussion

The aim of this small-scale study was to identify the value of student's subjective self-assessment of what they had learned in the Maritime English 1 course.

The first problem statement was about how students' self-perceived learning outcomes differed according to the skill. The results of the study show that, in terms of receptive skills, the respondents feel most confident about understanding the main points in a general text, understanding the main points in the coursebooks and the course reading text, understanding lectures, guessing unknown words

from the context in which they are spoken, following the main points in discussions about professional topics. They are also very confident about productive skills like taking notes in lectures, organising information that he/she has read, answering questions, participating in a conversation on familiar topics. The respondents are, however, less confident in participating in discussions on professional topics and in being able to give opinion in study contexts like classrooms or tutorials. And they are also less confident in grammar and the use of tenses.

The second problem statement was about how students' self-perceived learning outcomes were related to grades. Grades focus on individual students and they measure levels of mastery in course specific content. They may not thus reflect all of learning. The results of this study show that the respondent's subjective assessment of what they have learned from the course and their actual achievement based on objective measurement significantly differ from each other. In the majority of cases the respondents assess their skills as excellent, very good or good. Yet, the majority of respondents received the lowest letter passing grade E (sufficient) in the final exam. The final exam in itself tested the receptive skills like understanding a general meaning of text (the respondents claimed they were very confident about) and grammar in context (the respondents claim to be less confident about). The weak relation between self-perceived learning outcomes (subjective) and grades (objective) indicates that these two measures are not complementary. The question is whether the respondents overestimated their skills. Since the results of the study show that all respondents are "boastful" to more or less an equal degree, we could conclude that the data paint a reliable picture of their skills. Yet, the objective exam results are low. This leads to conclusion that the discrepancy between the two types of assessment, what is seen as the level of possessed (students) *and* as the level of required (teacher) skills, could be due to other factors. An explanation may also be that the respondents deemed their knowledge and skills to have improved over the course and assessed it in comparison with the beginning of course skill level. To have data on their entrance knowledge and skill level would have helped in depicting a more reliable picture.

An alternative explanation could lie in a possibility that students are not able to assess their learning outcomes. However, some previous research (Cassidy, 2007) shows that students are able to assess their own learning outcomes. Cassidy elaborates that the need for students to develop as independent learners is fundamental to academic success but is also essential to future professional success. And the ability to self-assess is a defining characteristic of an independent learner. But as Cassidy writes "this involves a high level of self-awareness and the ability to monitor their own learning performance. Self-assessment skills in an academic setting develop partly as a function of critical feedback from tutors" (2007, p. 314).

I would like to end this section referring to Cassidy (2007) and his study again. It demonstrates the relevance and appropriateness of self-assessment for students at the beginning of their career at a university. It also stresses the need to make sure students are aware of their abilities for self-assessment and that they value them. But it is equally important for students to hone the skills, to understand what it takes to assess fairly and consistently and to understand that assessment and learning are linked. I have written elsewhere (Knežević & Brdar, 2009) about great benefits of self- and peer-assessment because it triggers reflection on the student's own work. And it leads to a greater understanding of what is needed by teachers for assessment.

The third problem statement was about the implications of the measurement of learning outcomes for reforming the course programme and student assessment. As already pointed out, the weak relationship between students' self-perceived learning outcomes and final exam grades in this study indicates that these two measures are not complementary. It questions the successful implementation of the effectiveness of course level outcomes. Still, student pass rate and grades should not function as the only measures of the quality of course programmes, since grades could be due to different factors and abilities of the students. For example, some survey (Watkins & Morstain, 1980) showed that only half of the lecturers and even fewer students/respondents agreed that a student's grade was a reliable indicator of what they had learned in the course and that the final exam grade was not an adequate measure of learning that had taken place.

We could argue that there is a need for rethinking the scope of learning outcomes and there is a need for rethinking methods of assessment and their role in support of learning outcomes in terms of improved employability. There is also a need to investigate what elements in the teaching and learning process have an impact on the outcomes. However, measures of learning outcomes similar to the ones presented in this paper may be relevant tools for assessing skills that go beyond subject-specific knowledge.

5.   Conclusions

This paper focuses on students' self-perceived learning outcomes assessment. It was written to address students, faculty members and university administrators. From the results of this study, we can draw the main conclusion: that most respondents perceive themselves to be prepared, competent, and confident users of English. As the results indicate, the respondents are most confident in receptive skills that they most frequently encountered during the course (reading and listening). Less confidence in productive skills (speaking and writing) may be a reflection of the deficiency of practical experience in those aspects of the course programme. And in spite of a lot

of practice, the use of tenses and grammar in general are still a troublesome area. The weak relation between self-perceived learning outcomes by students (subjective measures) and final exam grades (objective measures) indicates that the two measures are not complementary.

An important issue evolved from the results of this study. The issue surrounding learning outcomes and whether there are implications for reforming the course programme and methods of assessment. It is clearly in the need of further study. And it is important to focus on a wide range of outcomes and objectives that cut across courses in the study programme and place importance on integration of learning and long-term retention. It is also important to pursue student involvement in the process of assessment and self-assessment in order to develop students' awareness and knowledge of criteria and standards.

To sum up, although self-assessment as a way of measuring student skills has its drawbacks, for example: the data do not estimate the overall level of skills in the students, they only analyse skill levels in the questionnaire, it also has the benefits, for example: self-assessment directs student further learning and the results can shed real light on the skills of the students in the course. These certainly outweigh the disadvantages.

Discussion questions:
1. The implications of the measurement of learning outcomes for reforming the course programme and student assessment.
2. What level of attainment of outcomes is required to assure the quality of programme offerings?

References

Analytic Quality Glossary. Available from: http://www.qualityresearchinternational.com/glossary/ [Accessed on 12 May 2010].

Cassidy, Simon. (2007). Assessing "inexperienced" students' ability to self-assess: exploring links with learning style and academic personal control. *Assessment & Evaluation in Higher Education. Vol. 32*, No. 3, pp. 313-330.

Council of Europe. (2001). *Common European framework of reference for languages: Learning, teaching and assessment.* Cambridge: Cambridge University.

European Communities. (2009). *ECTS User's Guide.* Luxembourg: Office for Official Publications of the European Communities.

Havnes, Anton. (2004). Examination and learning: an activity-theoretical analysis of the relationship between assessment and educational practice. *Assessment & Evaluation in Higher*

Education, *Vol. 29* (2), pp. 159 – 176.

Knežević, Božana & Irena Brdar. (2009). Integrating Reflection in Student Projects. *Strani jezici 4,* pp. 1-15.

Ministry of Science, Education and Sports. (2008). *Diploma Supplement*. Available from: http://public.mzos.hr/lgs.axd?t=16&id=14182. [Accessed on 23 February 2010]

Watkins, David & Barry Morstain. (1980). The educational orientations of lecturers and their students: A case study of an Australian university. *Australian Journal of Education 24*, pp. 155-163.

Zúñiga, Fernando Vargas (2002). *Key competencies and lifelong learning.* A technical workshop. Saint Lucia, 10-13 September.