Journal of Teaching and Education,
CD-ROM. ISSN: 2165-6266 :: 05(01):343-350 (2016)

Journal of Teaching and Education

UNIVERSITY STUDENTS: THE DIVIDE BETWEEN ASSESSMENT METHODS AND LEARNING ASPIRATIONS

Rose Marie Azzopardi

University of Malta

This paper looks at students' learning aspirations and the type of knowledge they would like to gain during the time they invest on their tertiary education. Learning styles questionnaires have been developed to take into consideration the way different people learn, because not all students are the same: some do their utmost to learn from their courses; others cram before exams but do not appear interested during lectures; others only appear for their first and last lectures; and yet others just seem to patiently see the course through with no real effort put into it. If a lecturer really wants to ensure that his/her students are meeting their learning aspirations, can different assessment methods have diverse results. Which assessment methods best meets the learning aspiration of students? The aim of this paper is to evaluate the connection between different assessment methods and the students' learning aspirations. Results from the empirical analysis show that assignments provide students with the best opportunity for learning as it shows their aptitude in various ways: capacity to do research, to be innovative in their answers, integrate what they have learned during lectures and present work that goes beyond cut and paste material. Students appreciate feedback, while engagement in class can be used to improve learning results.

Keywords: Tertiary education, Knowledge economy, Assessment methods, Learning.

Introduction

At a time when countries are vying with each other to be knowledge-based economies, when competition across the world is intensifying, the emphasis on education and how best this can bring about that competitive edge, has grown stronger. Yet education per se and the acquisition of degrees does not on its own guarantee that people have acquired knowledge which can be exploited in the economy. Many employers insist that the university is not providing students with the skills needed in the economy. Academics on the other hand argue that the university is there to give the basic skills which can be used in diverse situations in the economy. What do the students want and what are their learning aspirations? In what ways are these aspirations best achieved at university and what assessment methods are most likely to accomplish this aim? How do students learn best and in what ways can learning help them as individuals beyond university life?

People have different learning styles and over the past decades several questionnaires have been devised in order to take into account when providing training and educational programmes, to assure the giver and receiver a more effective relationship (see for example Honey and Mumford 2000 based on

David Kolb's model of experiential learning). Similarly students may be more effective being assessed in different manners. There are diverse methods of assessment (oral interview, class presentation, researched assignment, formal examination, portfolio preparation, online quiz, role-play, take-away exam just to mention some). But some students may not do well in some of them. Some may feel threatened if they have to face a class in role-play or a presentation, while others feel the pressure of cramming all their knowledge in a two-hour exam.

The aim of this paper is to evaluate the students' perspective on the issue of learning and in their opinion what assessment method best lends itself to evaluate their knowledge on the subject being studied for their degree programmes. The research was conducted at the University of Malta, with students following four of my study-units, however, this paper focuses on the results of one study-unit: Economics of Innovation, Creativity and Knowledge.

The rest of this paper is divided into three sections and a conclusion. The first section provides the literature review on learning and assessment methods. The second presents the research. The penultimate section discusses the results and the last section concludes.

Literature Review

People are different. Some scholars maintain that they are also different in how they assimilate and process information, and how they finally use that knowledge to make decisions: essentially individuals differ in how they learn. Differences are due to learning preferences (Pask 1976, Riding and Cheema 1991, Riding 1997, Sadler-Smith 1997, Riding and Raynor 1998) but also to diversity in intelligence and thinking processes (Jonassen and Grabowski 1993, Sternberg and Zhang 2001). This diversity not only in aptitudes but approaches,

> ... highlights the need for variety and diversity in instructional methods, reminding educators that there is no one single learning method that works for everyone...and how to address these differences in teaching and learning designs and practices. Zhang and Bonk 2008, unpaged)

These theories saw their beginning in the 1970's but there is no universal acceptance of them, with some educational experts maintaining that there is no proof that these need different teaching methods in class. In a recent article Willingham et al. (2015) suggest that since there is no scientific evidence that students' learning is better achieved through the interaction between students' preferences and the teachers' different methods of instruction to accommodate such preferences, it is far better if educators spend their time and energy on other theories which might be more helpful in teaching. The controversy thus continues after four decades. Nonetheless until such theories are completely discredited, schools, educators and executive training programmes continue to utilize these theories to develop and adapt teaching and training to suit individual needs based on their learning styles, even if such theories may have weaknesses.

The main proponent of these theories was David Kolb, who developed his model based on experiential learning. According to Kolb (1976, 1984) a person creates his/her own learning cycle which is derived from experience, observation, conceptualization and experimentation. Concrete experience (CE) and abstract conceptualization (AC) are two approaches relating to 'grasping experience' whilst reflective observation (RO) and active experimentation (AE) lead to 'transforming experience'. Over time the individual may develop strengths in one area or another. The table below shows the four approaches in the cycle and how four learning styles develop when focus is on a particular pairing of one grasping and one transforming experience.

Table 1. David Kolb's Model

Learner	Pairing of Approaches	Strengths	Main Feature	Job related Characteristics
Accommodator	CE and AE	Practical activity	Social	The Do-er
Converger	AC and AE	Application of theories	Practical	The Decision-Maker
Diverger	CE and RO	Imagination and discussion	Creative	The Creator
Assimilator	AC and RO	Inductive reasoning/theorist	Intellectual	The Planner

Peter Honey and Alan Mumford adapted Kolb's model and redeveloped it to suit more the experience of managers: having the experience, reviewing it, reaching conclusions and planning the next steps. The difference in the logic is that such characteristics can change over time and do not remain fixed. The learning styles questionnaire (LSQ) is a self-development tool which does not directly refer to learning but rather derives it from questions related to work-related behaviours. Honey and Mumford (2000) identified four types of learners: activist, pragmatist, reflector, and theorist. The characteristics are shown in Table 2.

Table 2. Characteristics of Four Types of Learners

Learner Type	Defining Phrase	Characteristics
Activist	I will try anything once	Suited to experiential rather than lectures Likes challenge of new experiences, involvement with others, assimilation and role-playing, problem-solving, small-group discussion, not keen on implementation
Pragmatist	As long as it works, that's fine	Favours independence, could undertake more research, prefers to apply new learnings to actual practice to see if they work Likes laboratories, field-work, and observations Likes feedback, coaching and obvious links between the task on-hand and a problem
Reflector	Best to be cautious	Conscientious but hard to get started, assimilates information, prefers to learn from activities that allow them to watch, think and review what has happened Likes to use journals and brainstorming. Lectures are helpful if they provide expert explanations and analysis
Theorist	If it's logical then it is good	Much time spent working it out, much redrafting, detailed investigations, prefers to think problems through in a step-by-step manner Likes lectures, analogies, systems, case studies, models, readings. Talking with experts is normally not helpful.

The LSQ of Honey and Mumford is possibly the one that is mostly used. However, there are others such as Barbe's VAK model based on three learning modalities: visualizing (such as picture, shape, sculpture, paintings); auditory (such as listening, rhythms, tone, chants); and kinesthetic (such as gestures, body movements, object manipulation, positioning). Most people have a preferred mode of learning but all three modes are used to some extent. Such preferences are not the same as strengths. For example a person can be a good public speaker (auditory), but would prefer to watch a movie (visualizing) rather than read a book. Some persons may be multimodal and score equally on two modes of learning.

The theories and models dealing with learning styles have mushroomed over the years and Coffield et al. (2004) identify 71 such models, the earliest dating back to 1909. The report focuses on thirteen models which they believe are the most influential in the field. They conclude that it matters for learning which method is actually utilized and that the implications can be significant.

Learning styles are only one part of the issue. Assessment methods can inhibit or aid in the learning process. According to research conducted in the UK on international students, Huang and Busby (2007) argued that 'didactic methods alone do not stimulate students in higher education' and conclude that there is the 'need to use more than one method when attempting to ascertain individual learning styles' (p.98), indicating that one method both in teaching and assessment may need to be utilized in order to engage and bring forth the full potential of students.

There is a distinction between *summative* assessment which essentially is the evaluation of a student's learning at the end of a course or study-unit by measuring it against a benchmark or standard, with the possible use of rubrics to simplify and make grading more transparent. This often takes the form of a test or exam, assessed against a set of criteria of what constitutes a hierarchy in the grading system. *Formative* assessment includes both formal and informal methods which direct an educator to change teaching methods during the course of a study-unit, in order to influence the learning process and thus improve the potential of students. Methods often include qualitative feedback (rather than focus on grades and scores) and engage more the notions of content and understanding of material. Such methods can include summarising the lecture in a few points, or submitting outlines rather than the full paper. Assessments on their own are not enough since learning depends on the motivation of the learner. The two types were first coined by Michael Scriven in 1967 but later adopted and developed by Bloom et al (1971), and Black and William (1997, 2003, 2009).

In order to assess students' learning the assessor needs to coordinate three components: cognition; observations; and interpretations. This is referred to as the assessment triangle and is shown in Figure 1.

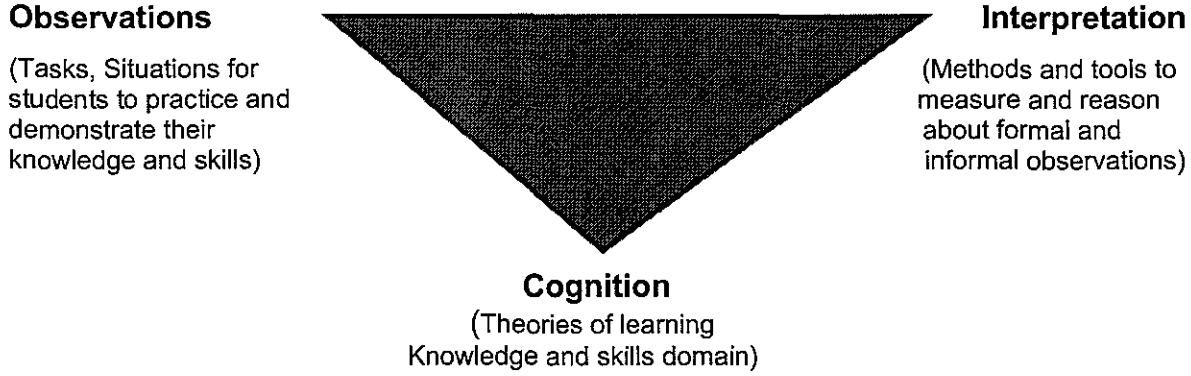

Figure 1. The Assessment Triangle
Source: Adapted from National Research Council (2001)

Assessments need to synchronize these three components in order to be effective. Tasks have to be designed to allow students to demonstrate their knowledge and for assessors to analyse their performance (ibid.).

However, education should go beyond the assessment of knowledge and focus more on providing an experience which will have an impact on the way one thinks, feels, analyses and finally acts. Perhaps with all the focus on assessments and transparent grading of knowledge, educators have lost their true benefit to learners, to aid them in how they evaluate information and knowledge and make decisions based on sound foundations, which finally effect their life.

The Research

The focus of the research was to create an atmosphere for a more participant-centred learning approach, and go beyond mere knowledge transfer but rather to see if the process of learning was providing for life skills such as self-confidence, understanding and appreciating different perspectives, integrating topics, analysing a problem from one's opposing beliefs, and taking responsibility for one's actions.

During the second semester of an academic year, I had over 200 students following different courses, second, third, and four year undergraduates, postgraduate part-time course for executives, and a mature group of mainly women following a diploma course in gender and development. This wide variety of students brought with it a myriad of learning styles and dispositions towards learning. This particular semester provided me with laboratories to experiment on gauging not only their learning styles but also to see how they react to different methods of lecturing and informal assessments. The strategy was multi-fold: to discover learning styles; the value of different assessment types for students; how new lecturing techniques were appraised by the students, the use of exit cards to gather information and finally a satisfaction questionnaire at the end of the courses. The changes included different lecturing styles, room structure, and assessment methods in order to analyse the reception of such variations by students. At the end of each lecture, students were presented with an exit card which contained one question regarding the different changes that were occurring. The accumulated answers were analysed by class and theme. The following are the results for one study-unit, an elective one, chosen by thirty four students, including six non-Maltese ones.

New techniques adopted were the shape of the room, which is normally in rows. Instead a U-shaped format was adopted and this could be achieved because of the availability of flexible seating, which is not the case in most lecture halls. This format allowed the lecturer to see everyone and so be in eye contact with all students, since rows often lead to some students hiding behind others. It also allowed students to see each other. There was the possibility of less distraction, since mobile phones could not be used without being very evident. The atmosphere bred more familiarity which resulted in more interaction and discussion. At the second lecture I did not put the format in a U-shape but left it in rows, and the students asked if they could change it back to the U-shape. This showed that the novelty of the shape of the room had been welcomed and its benefits appreciated.

Students were provided with a list of six instruction methods and asked to rank them according to their preferences. These were ranked in the following manner: practice by doing, discussion, reading, teach another, audio visuals, and lecture. The most interesting fact was that lectures were the least preferred by students, even though this tends to be the most favoured by educators. Students actually prefer to practice by doing, discuss their views on the topic, read more on it and show their knowledge through teaching others.

Another technique used during lectures included brainstorming at the beginning of the lecture of the topic for discussion. This helped students to think about a topic rather than just being fed information. It seemed that all the students were sharing in the creation of the topic since every student had to write something on the whiteboard. The brainstorming session set the framework of ideas and concepts linked to the topic and the lecture then threaded them into a coherent whole.

Another method used was role-play, where the students had to act out an economist and had to present that economist's perspective on the topic in hand, but also to attest to the economist's contribution to the topic. Each student had been presented with the name of the economist the week before and therefore in five minutes they had to present their character and his work.

An interesting discussion ensued when I first asked two students on their views about a particular theme, one was in favour and the other against. Then I asked the leaders to choose their teams and they chose people who had the same views as themselves. Next, I assigned the team in favour, with the fact that it had to argue its position as the team against the theme, and did vice versa with the other team. At first they felt caught off guard, as essentially they had to support and justify their opponents' views which did not come naturally. After the discussion, the students realized the value of being able to see the views of others, especially of those that effectively have diametrically opposing perspectives.

Other techniques included discussion, ad hoc one minute presentations and group work. The exit cards presented minutes before the end of class, helped to show what they had learnt, what new ways of thinking had been elicited, what could be applicable to real life, and what needed to be prepared for later meetings with the students.

In terms of assessments, most students preferred an assignment, mainly because they maintained that one learns more as one has to do research, and can develop the assignment depending on material gathered. Second came regular tests, since more assessments over the semester would show the student whether he or she was improving or not. Others suggested coursework spread evenly across the semester and not one huge accumulated amount of material for an exam. Some suggested feedback would be very welcome on grades received. In terms of exams, which few actually favoured, the comment was that you tend to learn by heart, and that you forget everything once the exam is over. Furthermore, it was felt that it was not fair to be assessed on a two-hour exam for a whole semester of lectures and readings.

The experiment that helped them understand the value of assessments and if criteria are used then the assessment is fair, was when I introduced peer assessment. I provided them with five criteria for their assessment: knowledge of the topic, organization, use of theoretical framework, lessons learnt, and presentation skills. There were seven groups who had to make a presentation they had been working on. I was to assess them but then each group was being assessed by the other six groups. The final grades given by their peers and the lecturer were very similar, if anything the lecturer was often slightly more generous than the students themselves in their own peer assessments. These are shown in Table 3.

Table 3. Peer Assessment and the Lecturer's Grades

Group	Peers' Grade	Lecturer's Grade
A	64	60
B	75	78
C	80	82
D	65	72
E	78	65
F	74	80
G	75	85

During the final lecture, students were presented with the Honey and Mumford learning style questionnaire. They were able to evaluate themselves, after the results were explained to them and Table 2 above discussed with them. It was also pointed out why different techniques had been adopted during the semester. They were also presented with some of the results collected from certain exit cards. Finally I asked them to fill in an evaluation questionnaire on the whole study unit. The survey consisted of 11 questions and is available on http://www.surveygizmo.com/s3/1665355/Economics-of-Innovation-Creativity-and-Knowledge.

Discussing the Implications of the Results

Innovation is continuously needed but especially in education and in an ever-increasing competitive world. Students need new challenges and excitements in class and it is not an easy task to keep them focused all the time.

Even if most universities have invested in software which is able to detect copying, some students nonetheless dare to do so. Ghost writing has become more of a problem but money is the issue in this case and most students would not have the financial capacity to pay. This is one of the reasons why some lecturers are wary of assignments. Exams tend to be cut and paste either from books or from lectures,

since the time element does not work in favour of students. To be able to cram all the information and knowledge that students accumulate over the 14 weeks allocated to a semester and to present all that in a two-hour exam period may not be the best way to test and assess the knowledge gained by students. Spitting out information does not equate to learning. Students need challenges and studying by rote pre-prepared essays for exams is not the best of challenges.

Some of the lessons learnt from the whole experiment and as listed down by the students themselves in the evaluation questionnaire, did not just relate to information or knowledge gained but rather to skills, ideas, new perspectives which went beyond the assessment at the end of the exam. These included: that everyone can be innovative in his or her own way; not to focus on exams as these come and you will obtain a grade, but rather the focus should be on gaining something for one's own knowledge; asking a question may actually change one's way of thinking for good; becoming better at seeing other outlooks on situations and being able to re-think old thoughts and come up with new ideas.

The experience of students, even if at such a young age, showed that their home environment, their innate nature and their capacities, were different but all valuable in diverse ways. Persons do have different learning styles which may be classified as Kolb maintained years ago, but what learning needs to accomplish is to bring out that diversity to make up a more innovative whole.

Conclusion

Students enjoy innovation in class. They are ready to work more than lecturers assume they do. They like feedback and appreciation for work done, whether it is good or not so good. If the full impact of learning is explained better, students appreciate the process more. Learning should always be a fun process, at whatever age.

Experimentation in class may be essential to gauge the best ways to effectively create the right environment for real learning and not just info-digestion. Learning needs to be accomplished for different types of learners but above all it needs to be relevant for skills acquisition throughout one's life.

The results show that summative assessment is transparent and easier for lecturers as the guidelines provide an effective way of assessing students on what they know. However, the impact may be short-term. Formative assessment is more onerous on the lecturer as it involves more work and the lecturer may even be accused of not being fair, but concurrent peer assessment can eliminate such a misconception. The influence of formative assessment may have a longer term impact. Unfortunately the bureaucratic structure of universities may not always offer the possibility for formative assessments.

References

1. Black P. and William D. (1997) Assessment and Classroom Learning. *Assessment in Education, Principles, Policy and Practice.* Vol. 5, Issue 1, pp. 7-74. Taylor and Francis Group
2. Black P. and William D. (2003) In praise of educational research: formative assessment. British Educational Research Journal. Vol 29, Issue 5, pp.623-637.
3. Black P. and William D (2009) Developing the theory of formative assessment. Educational Assessment, Evaluation and Accountability. Vol. 21, Issue 1, pp.5-31.
4. Bloom B. S. (1968) Learning for Mastery. University of California Press.
5. Bloom B. S., Hasting T. and Madaus. G. (1971) Handbook of Formative and Summative Evaluation of Student Learning. Mc-Graw Hill.
6. Coffield F., Moseley D., Hall E. and Ecclestone K. (2004) *Learning Styles and Pedagogy in Post 16 Learning: A Systematic and Critical Review.* UK. Learning and Skills Research Centre.
7. Evaluation Survey on Study-Unit available on
   http://www.surveygizmo.com/s3/1665355/Economics-of-Innovation-Creativity-and-Knowledge.

8. Huang R. and Busby G (2007) Activist, Pragmatist, Reflector or Theorist? In Search of Postgraduate Learning Styles in Tourism and Hospitality Education. *Journal of Hospitality, Leisure, Sport and Tourism Education.* Vol. 6, No. 2, pp.92-99.
9. Jonassen D.J. and Grabowski B.L. (1993) Handbook of Individual Differences, Learning and Instruction. Erlbaum.
10. Kolb D.A. (1976) The learning style inventory: Technical Manual. Boston: McBer.
11. Kolb D.A. (1984) Experiential learning: Experience as the source of learning and Development. New Jersey: Prentice-Hall.
12. National Research Council (2001) Knowing What Students Know: The science and design of educational assessment. Washington: National Academy Press.
13. Pask G. (1976) Styles and strategies of Learning. British Journal of Educational Psychology. Vol. 46. pp: 128-148.
14. Riding R. (1997) On the Nature of Cognitive Style. Educational Psychology Vol.17, pp: 29-50.
15. Riding R. and Cheema I. (1991) Congnitive Styles: An Overview and Integration. Educational Psychology. Vol. 11. pp:196-215.
16. Riding R and Raynor S. (1998) Cognitive Styles and Learning Strategies: Understanding Style Differences in Learning and Behavior. London: David Fulton Publishers.
17. Sadler-Smith E. (1997) Learning Styles: Frameworks and Instruments. Educational Psychology, Vol.17, pp: 51-65.
18. Scriven M. (1967) The Methodology of Evaluation. In Stake R.E., *Curriculum Evaluation.* American Educational Research Association.
19. Sternberg R.J. and Zhang L.F. (2001) (eds) Perspectives on Thinking, Learning and Cognitive Styles. pp:vii-x. Erlbaum.
20. Taras M. (2002) Using assessment for learning and learning from assessment. *Assessment and Evaluation in Higher Education.* Vol. 27, Issue 6, pp. 501-510.
21. William D. (2006) Formative assessment: getting the focus right. Educational Assessment. Vol. 11, Issue pp. 283-289.
22. Willingham D.T., Hughes E.M., and Dobolyi D.G., (2015) "The scientific status of learning styles theories". *Teaching of Psychology*, Vol. 42. No.3, pp. 266- 271. doi:10.1177/0098628315589505.
23. Zhang K. and Bonk C.J. (2009) Addressing Diverse Learner Preferences and Intelligences with Emerging Technologies: Matching Models to Online Opportunities. Canadian Journal of Learning and Technology. Available at: http://www.cjlt.ca/indesx/php/cjlt/article/view/496/227