

Student Beliefs about Learning: New Zealand Students in Year 11

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Abstract

Learning requires intention and strategy on the part of a student. Deep intentions and methods are to do with transformation of knowledge for personal satisfaction while surface ones focus on accurate reproduction, often with the purpose of achieving desired grades in assessment. The beliefs about learning of over 700 15-year-old New Zealand secondary students were examined with multiple techniques (i.e., open and closed response survey questions and semi-structured focus groups). Students were found to exhibit strong 'mini-max' beliefs involving the surface reproduction of taught material in order to maximise achievement in end of year, high-stakes qualifications assessments. In contrast, teachers (N=71) of English, mathematics, and science in the same schools were found to have deep learning beliefs. However, teachers had the same surface reproduction strategy beliefs towards learning that the students had. It is suggested that the external high-stakes assessments have contributed to this reliance on surface strategies and it is argued that teacher beliefs about the effectiveness of relying on surface strategies will need to change before student beliefs about learning change.

Learning requires active mental processing of information in which meaningful connections are made aided by repetition, practice, and memorisation (Howe, 1998). However, "in situations where the learner's aim is to gain new information or add to their store of knowledge" (Howe, 1998, p. 10) emphasis is often put on the techniques of repetition, practice, and memorisation at the expense of making meaningful connections. This remembering approach to learning has been described as 'surface' (Marton, 1983, p. 291) in contrast to a 'deep' view that "learning is a qualitative change in one's way of understanding some aspect of reality". Thus, there is clearly a tension between conceiving learning as primarily about remembering or as mostly about understanding. The conception of learning that a student has is affected by the learner's intention (i.e., why the student learns) and by the process of learning adopted by the learner (i.e., how the intention is carried out) (Entwistle & Marton, 1984). Research on student understanding of learning has identified three main approaches to learning: deep, surface, and strategic (Entwistle, 1997). These approaches are characterised by different learning intentions and processes. In the deep approach, intention is identified by a desire to understand ideas for oneself and achieved by transforming information into new knowledge. The surface approach is distinguished by an intention that emphasises coping with course requirements and fulfilled by reproducing information as it was presented. The strategic approach has as its defining goal the achievement of the highest possible grades and is obtained by organising information into recognisable patterns.

It is commonly accepted that deep approaches to learning are best for making meaning while surface approaches are good for remembering facts. However, successful learning appears to depend on learners having not one 'best' approach but rather in having a wide variety of study strategies or processes that can be flexibly used in response to the various contingencies involved in learning (Purdie & Hattie, 1999). Relevant learning contingencies include the kind of material to be learned, the amount

of time available to learn, and the learner's purpose or goal. Flexibility requires that the learner have the metacognitive awareness to monitor, coordinate, and, in response to contingencies, select from a body of learning strategies. A widely held, and perhaps rational to a teenager, combination of approaches for adolescents is the 'mini-max' approach to learning (Covington & Teel, 1996). Mini-max is a minimum effort for maximum return practice that emphasises achievement motivation or intention (i.e., get the highest possible grade) combined with surface strategies or methods (i.e., memorise or rote learn procedures). Teenage learners may adopt this surface-achievement approach because by passing assessments or examinations they obtain socially powerful credentials, which permit entry to future employment or educational opportunities. Thus to many teens, it is achieving the credential that matters, not the learning represented by the credential.

This article reports a multi-technique study (i.e., survey questionnaire and interviews) conducted with New Zealand secondary school students and their teachers that investigated, in the context of research on studying, student and teacher beliefs about learning. The research aimed to identify the nature of students' learning beliefs in their first year of high-stakes qualifications assessments (i.e., New Zealand School Certificate) with the hope of identifying some of the phenomenographic obstacles to successful learning. Most students in Year 11 (i.e., the third year of secondary schooling) attempt New Zealand School Certificate, which is the first qualification in the New Zealand Qualifications Framework. It is a high-stakes assessment since access to Year 12 courses is dependent on passing the three-hour end of year examination for each subject. Most secondary schools make courses in English, mathematics, and science compulsory for Year 11 students, even for the minority of Year 11 students not enrolled in School Certificate level courses.

Instrument: Questionnaire

In the second month of the academic year, secondary school students completed a self-report questionnaire of 113 statements. In the 50 minutes allowed to complete the questionnaire, the students' teachers were asked to assist students in understanding the statements. Students responded by indicating the degree to which they agreed that the statement defined learning. A modified Likert scale containing four positive and two negative agreement responses was used to increase variance. This skewed scale was used because it was expected that students would react positively to the statements. The questionnaire contained a section of 6 statements (Figure 1) about learning beliefs taken from Entwistle's (no date) Approaches and Study Skills Inventory for Students (ASSIST). These statements exhibited characteristics of surface, achieving, and deep beliefs about learning. See <<http://rapidintellect.com/AEQweb/spri02.htm>>

Three of the statements are surface oriented because they emphasise information, details, and remembering. The other three items exhibit a deep view of learning because of their emphasis on personal development, different perception, and understanding for itself. At the same time as the students were surveyed, 71 Year 11 teachers of English, mathematics, and science in the same schools completed a complementary questionnaire which included the identical learning belief statements and response scale. As part of the questionnaire, students were asked to define what they understood studying to be and to indicate their easiest subjects, and the grade they expected to receive for three core subjects of English, mathematics, and science.

Instrument: Interviews

Two months after the questionnaires were completed, eighteen teachers were interviewed using a semi-structured interview schedule. From each of the six schools

one teacher from each of the three core subjects (i.e., English, mathematics, and science) who had completed the questionnaire was chosen. Six months after the questionnaire was administered, three focus groups of six students were chosen in each school for a one-hour semi-structured group discussion. Each group of Year 11 students, nominated by the teacher from across the class's ability range, was selected from a class for each of the previously interviewed 18 teachers.

Respondents

Respondents were obtained by surveying the complete Year 11 population of students from six secondary schools of which four were co-educational (Table 1). See <http://rapidintellect.com/AEQweb/spri02.htm> One school was located in a provincial town approximately one hour from the major metropolitan area in whose suburban areas the other five schools were located. Schools were selected equally across socio-economic status and size categories. The two single sex schools were used to supply the students in high decile, small schools. There was relatively equal representation by school socio-economic status while two-thirds of students were from large schools.

Results

In total, there were 734 valid responses (Table 1) from Year 11 students whose average age was 15 years, with 52% of the respondents being male. Between 80 and 90 percent of students were doing the School Certificate version of three core subjects (i.e., English, mathematics, and science). These three subjects were listed among the four easiest subjects the respondents were enrolled in. The students believed that they would get their highest scores at the end of the year from these same three subjects. However, between one in five and one in four students expected to fail the course they were taking in these same subjects; English (20.6%), mathematics (25.7%), and science (26.4%). Clearly, despite the majority of students approaching these courses and the associated high-stakes qualification assessments with confidence, there was a sizeable minority expecting quite a different outcome.

Beliefs about Learning: Questionnaire

Of the many varied definitions or descriptions of the word 'study' given by students, the vast majority of student responses indicated that they had, at the early stage of the school year, a 'Mini-max' understanding of learning (Covington & Teel, 1996). Of the 144 responses that addressed purpose for studying, 131 focused on getting high grades or passing the end of year qualifications. Nearly all of the students provided a definition that focused on methods or processes of studying. Of the 762 definitions provided, 596 gave a type of surface strategy or method, including revision, re-reading, and reviewing of the year's work.

This mini-max belief was continued in the way students responded to the Learning Beliefs statements (Table 2). The students strongly agreed that learning involves building up knowledge by getting facts and information and understanding new material for themselves. Whereas, they seemed more reluctant to agree that learning meant developing as a person or seeing things in a different or more meaningful way. Although the difference in mean item score between surface and deep statements is not great it is certainly in a direction consistent with the mini-max belief system. See issue's website <http://rapidintellect.com/AEQweb/spri02.htm> What is more interesting is to compare students' learning beliefs with that of their teachers (Table 2). Although the differences between teacher and student surface scores are not large, the within respondent category trend is most interesting. Teachers preferred a deep view of learning, while students preferred a surface view of learning. This discrepancy should be of real concern to teachers. In other words, despite teachers' deep beliefs about the

nature of learning, students are clearly committed to a surface approach to learning strategies and achievement motivation.

Beliefs about Learning: Interviews

In small group discussion, student responses to questions about their goals or purposes in learning and studying further illuminated their learning beliefs. The majority of students reported having immediate achievement oriented goals followed by longer-term career oriented achievement goals. Immediate achievement goals were expressed as receiving a desired grade or result in the upcoming external qualification examinations. These ranged from a high standard (e.g., 'A' or 80%-90%) to a just satisfactory grade (e.g., 'just a pass' or being over the 50% mark). Objectives around gaining an understanding of a subject or having no goals at all were the next most commonly voiced purposes in learning. Emphasis on the 'mini-max' attitude was variable across subjects and schools but could not be attributed to student gender or ethnicity or type of school. Longer-term achievement goals were oriented around needing a certain level of examination result in order to enter into a preferred future career, such as pilot, computer programmer, engineer, nurse, a veterinarian, or journalist. Alternatively, students were focused on obtaining sufficient qualifications to a satisfactory standard so as to allow them to enter into preferred tertiary education programmes, such as computer science. Notwithstanding having an achievement focus, there were a number of students who, despite needing high grades in the examinations due to competitive entry requirements, were only aiming to get only just 50% passes.

In contrast to this overwhelming achievement orientation toward learning, only three out of 108 students reported that besides reaching a target percentage, they also wanted to gain an understanding of the subject or understand more about the subject. Less than five students mentioned gaining a better understanding of English for their own personal satisfaction. A small number of students, usually those not enrolled in external qualification examination courses, reported that they had no goals for the subject. They were just doing the alternative course, as there were nothing else they felt they could do and that the class was 'filler' in their timetable. Other students reported that they did not really care what they got because for a variety of reasons; (a) they would either be leaving school at the end of the year, (b) they would not continue with the subject the following year due to lack of interest or need of the subject for their preferred goals, or (c) they had been forced to do the subject because of school requirements. In contrast to the students, teachers' goals for the students' learning, as expressed in the interviews, were largely deep, focusing around developing the life chances, personal potential, and personal growth of students. These goals were complemented by an equally strong achievement emphasis on success at the end-of-year qualification examinations or assessments. Surface goals were rarely expressed. There was little difference between teachers though there was a lesser emphasis on personal growth goals among six science teachers.

Teachers suggested four major categories of obstacles for why students failed to achieve those learning goals; societal ills, student attitudes, student motivation, and school controlled structures and systems. Reasons associated with student attitudes or motivation were the most frequently identified kind of obstacle (28 out of 53 reasons). A further 23 reasons focused alternatively on social ills (e.g., poverty, poor family modelling or support) or school structures (e.g., class size, lack of resources). In contrast, only two teachers identified reasons within the immediate control of the individual teacher (i.e., inadequacy or newness of the teacher, poor selection of teaching techniques). Thus, it would appear that this group of teachers believed that there was very little they could do about the reasons that their deep and achieving goals

for their students were not fulfilled. Instead, they believed that students needed to change the way they approached schooling for those goals to be met.

Conclusion

The learning beliefs of students in this study were strongly focused on achievement, which was understood as passing the end of year assessments. Overwhelmingly, these students viewed learning as a surface-level mastery of material utilising methods to do with rehearsal, revision, and repetition. Kiewra & DuBois (1997) regard emphasis on such surface methods as, as they put it, “re-diculous”. Few students focused on any aspect of deep learning goals involving the personal transformation of other people’s knowledge into their own. Students, except for the fifth to quarter who expected to fail, expected to achieve through surface learning strategies and processes.

In contrast, teachers believed that learning was really about deep understanding, but provided students with surface strategy approaches to learning since they too were committed to achievement-oriented goals. In addition, teachers believed that overcoming obstacles to achievement was not within their own control. Despite overwhelming evidence that teachers make a difference to student learning and achievement, these teachers seemed to believe that if students did not learn through surface approaches then failure had nothing to do with teacher practice. It is possible that this focus on achievement through surface strategies is due to the narrowing effect of a high-stakes assessment system on learning beliefs and practices. Teachers seemed to be victims of the qualification system as much as the students.

Nevertheless, if students are to develop a rich collection of learning strategies over which they exercise control then both students and teachers have to abandon their common surface strategy approaches to learning. It is clear that teachers will need to change their approaches to teaching students about learning before students can be expected to develop a richer approach to learning. Thus, teachers must learn how to equip students with a greater range of strategies as well as exposing students to a wider variety of purposes or goals for learning. Teachers must stop blaming external factors for student failure and seek to empower students with diverse range of learning strategies. Otherwise, teachers and students are likely to continue in approaches that only limit learning.

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