

# **The Influence of Assessment on Student Learning**

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## **Abstract**

This paper draws on 3 comparative studies investigating the influence of assessment method on student learning. Each study employed a three-part questionnaire requiring tertiary students to reflect upon the way they prepared for and perceived two assessment tasks (a coursework assignment and an examination) of the same course. The studies contrasted the assignment essay with the multiple choice examination (study 1), the short answer examination (study 2), and the essay examination (study 3). Results from Parts A and B of the questionnaire reveal differential learning approaches and perceptions according to assessment method. Of particular importance are findings that students are more likely to employ surface learning approaches when preparing for their examinations and deep learning approaches when writing their assignment essays. Part C of the questionnaire required students to state which task they preferred to assess their understanding of the course and to provide reasons for their choice. In each study the open-ended responses reveal a clear preference for assessment by assignment essay rather than examination and provide interesting insights into students' attitudes to their assessment tasks.

The current paper aims to present the findings from Part C of study 3 with reference to the other two studies, and to discuss issues raised and implications for student learning.

**Key words:** Assessment, Learning, Higher Education

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## Introduction

The theme of this conference is 'Educational Research: Towards an Optimistic Future'. One of the main aims of my research over the years has been to improve the quality of student learning by understanding the influence of assessment on student learning and by promoting better assessment methods. This important relationship between assessment method and the quality of learning has been firmly established in the literature (Scouller 1995, 1996, 1998; Scouller & Chapman 1999; Scouller & Prosser 1994; Biggs 1999; Ramsen 1992; Thomas & Bain 1984) and has been acknowledged and exemplified in documents such as the University of Sydney's 'Principles of Assessment' Policy. In this document staff at the university are required to design assessment tasks that "encourage students to learn how to learn". The gradual implementation of this policy certainly suggests an optimistic future for student learning.

However, while universities have been under increasing pressure to improve the quality of both the teaching and learning of their students, they have also been faced with diminishing funding and increasing student numbers. The heavier workloads of staff resulting from these factors have implications for assessment methods.

My research has investigated the most common methods of assessing student learning. The three studies have required students to reflect on the two methods of assessment in a particular course, and for each task to identify (a) their preparation strategies and motives, (b) their perceptions of the levels of intellectual processing involved, and (c) their preference for the way they were assessed.

Employing a three part questionnaire and a 5-scale Likert scale, each study contrasted the assignment essay with an examination assessment. The assignment essay was contrasted with the multiple choice question (MCQ) examination in Study 1, with the short answer examination in Study 2 and with the examination essay in Study 3. The three studies contrasted the type of assessment (formative versus summative) and the first two studies contrasted the type of task, answering an essay question versus answering multiple choice or short answer questions. In the third study, the type of task remained constant since students were required to answer an essay question in two contexts, as a coursework assignment and in an examination. One of the aims of the third study was to investigate whether the different learning approaches and perceptions revealed in the first two studies (both the quantitative and qualitative data have been presented and published elsewhere) were related to the type of assessment or the type of task.

In all three studies results from Parts A and B of the questionnaire (the quantitative data) revealed differential patterns of learning approaches and perceptions according to both type of assessment and type of task. In the examination context students were more likely to employ surface strategies, report surface motives and perceive that lower levels of intellectual processing were being assessed. In contrast, they were more likely to employ deeper strategies, report deeper motives, and perceive that higher levels were being assessed in the coursework context. Thus the results suggest that all the examinations encouraged more surface approaches regardless of type of examination.

However, results from Part C of the questionnaire (the qualitative data) in Studies 1 and 2 (Scouller 1999, 1997) revealed a more complex picture of students' attitudes towards their assessment tasks than that provided by Parts A and B (the quantitative data). Part C asked students to select which method they preferred to assess their course and the reasons for that choice. The majority of students in both studies preferred writing an assignment essay to being assessed by an examination because the assignment essay provided them the opportunity to present their knowledge in their own way and to develop and demonstrate

higher order intellectual skills such as analysis, critical thinking and evaluation of source material. Students who preferred the assignment essay were highly critical of their examinations, especially the MCQ examination in Study 1. In fact, the latter group of students were passionate in their dislike of the MCQ examination for encouraging reproduction and regurgitation of information, for its unfairness, and for being an inappropriate assessor of their learning in the particular course.

The current paper aims to report on the results of Part C of Study 3, that is, students' preferences for how their course is assessed, the assignment essay versus the examination essay. In this study the essay is contrasted in two contexts, a combination of assessment methods that is very common in the Arts and Humanities faculties.

## Method

### *Subjects*

The subjects of this study are 167 Psychology III students at the University of Sydney, Australia. The majority of students are female, born in Australia, and from English-speaking backgrounds.

### *Procedure*

The same questionnaire and procedure were employed as Studies 1 and 2 (Scouller 1999, 1998, 1997, 1996, 1995) although the tasks contrasted differed; the assignment essay (formative and completed during the semester as part of their coursework) versus the examination essay (summative and completed during their end-of-semester examinations. Students were required to complete a three-part questionnaire during their tutorial sessions. A description of Part A (based on Biggs' SPQ, 1987a & 1987b) and Part B of Study 3's questionnaire has been published elsewhere (Scouller & Chapman 1999). In Part C students were asked to complete one of two open-ended statements that most strongly represented which of the two assessment forms they preferred for assessing their last semester's course.

### EITHER

I preferred writing an exam essay to writing an assignment essay as a form of assessing my knowledge of *History and Philosophy I* because .....

### OR

I preferred writing an assignment essay to writing an exam essay as a form of assessing my knowledge of *History and Philosophy 1* because .....

Students were asked to state their preference for one of the assessment methods of their course. The incomplete statement is contextualised so that their responses would reflect their attitudes to their assessment tasks and their perceptions of their appropriateness for that particular course. Five lines were provided for student responses to the open-ended statement of choice.

## *Analysis of data*

The reasons students provided for their preferences are the main foci of this paper. The qualitative data collected from 162 scripts (5 were deleted) were analysed in a similar way to those of Studies 1 and 2 for easier comparison. See Scouller (1999, 1997) for a more detailed description of procedural steps. Briefly here, the scripts were first categorised into two groups according to students' preferences for assessment methods.

Group A: preferred the assignment essay over the examination essay

Group B: preferred the examination essay over the assignment essay

Next, each script was read twice and brief notes and frequency counts were made of both positive and negative comments and attitudes. It was found that the four attitudinal categories and sub-categories that emerged in previous analyses (reported in Scouller 1999, 1997) and presented as Table 1 overpage could appropriately be used again. Students' attitudes were similarly categorised when they referred to (a) **the learning process**; (b) the task as an **evaluation instrument** of their learning; (c) their **affective and motivational responses** to the assessment forms; and (d) the **learning product, the outcome** they received, or some aspect of **their performance**.

Quotations are provided in the text to illustrate a category or issue. Sources are cited in parenthesis; for example (Pref. Exam Essay, 00123) provides information on the assessment preference and students' project number.

## **Results**

The findings will be discussed as follows. Firstly, overall preferences will be briefly outlined. Secondly, student responses will be explored in terms of their reasons for preferring an assessment method and their criticisms of the alternative method, and finally, major issues that emerge will be discussed.

### **Overall Preferences**

The first important finding was that, like the two previous studies, many more students selected the assignment essay as their preferred form of assessing their knowledge and understanding of their course rather than the examination essay. The analysis of 162 texts in this study, revealed that almost twice the numbers of students ( $n = 104$ ) preferred writing an assignment essay in contrast to 58 students who preferred being assessed by an examination essay.

### **Reasons for Preferring Assessment Method**

The most obvious and important finding is that students most commonly referred to the learning process when providing reasons for their preferences and when criticising the alternative assessment method. Firstly, the most common reason provided by both groups of

Table 1: The Four Categories (Learning Process, As an Evaluation Instrument, Affect and Motivation, and Product, Outcome & Performance) and sub-categories students for preferring the assignment essay (168 references from Group A) or the examination essay

(33 references from Group B) was that their preferred task involved higher levels of intellectual skills and abilities. Such comments were far more frequently made and more elaborately discussed by Group A than Group B yet it was the most common response of both. Table 2 presents the main reasons for preferring either assessment task in order of frequency and with the number of comments in parentheses beside each reason.

## **Category 1: The Learning Process**

### **1.1 Kinds of learning**

#### *1.1.1 Higher level intellectual skills and abilities*

engaging in research/wider reading

giving/exploring/developing/supporting/changing opinions

learning/understanding

logical and critical thinking/reflection/thinking through concepts

seeing relationships/integrating material/cross referencing

analysis

application

evaluation of sources, topics, and readings

organising facts

#### *1.1.2 Lower level intellectual skills and abilities*

reproduction/regurgitation

focus on lectures/tutorials

### **1.2 The degree of student control over the process of learning.**

choice over topic according to personal interest

asking for assistance

time, flexibility, scope, freedom

### **1.3 Breadth versus depth of knowledge**

breadth - general issues, overview

depth - detail

## **Category 2: As An Evaluation Instrument**

### **2.1 Appropriateness**

indicator of knowledge, ability and effort

provider of feedback on understanding and/or ability

relevance to discipline, subject area, lectures and tutorials

### **2.2 Task Characteristics**

task ease or difficulty

recognition versus recall

correctness

role of chance, luck, 'fluke'

fairness

guessing

types of questions

## **Category 3: Affect and Motivation**

### **3.1 Affect**

sense of satisfaction and/or involvement

lack of involvement in task

stress

### **3.2 Motivation**

effort

lack of effort

**Category 4: Learning Product, Outcome and Performance**

**4.1 Product-oriented**

producing quality response

communicating ideas and opinions clearly

**4.2 Outcome-oriented**

gain better marks/chance to excel

make up in one area if poor in another; i.e. multiple chances

**4.3 Performance-oriented**

ability attribution

Table 2: Reasons for Preferring Assessment Method

Preferred Assignment Essay (n=104)	Preferred Examination Essay (n=58)
<p><b>A. Learning Process</b></p> <p>1.1.1 Higher levels of intellectual abilities or skills <b>(168)</b></p> <p><b>B. Learning Process</b></p> <p>1.2 Degree of control <b>(58)</b></p> <p>more time [45]</p> <p><b>C. Affect and Motivation</b></p> <p>3.1 Affect <b>(23)</b></p> <p>less stress [14]</p> <p>sense of satisfaction/involvement [9]</p>	<p><b>A. Learning Process</b></p> <p>1.1.1 Higher levels of intellectual abilities and skills <b>(33)</b></p> <p><b>B. Learning Process</b></p> <p>1.1.2 Lower levels of intellectual abilities and skills <b>(18)</b></p> <p><b>C. As an Evaluation Instrument</b></p> <p>2.2 Task characteristics <b>(16)</b></p> <p>task ease [9]</p> <p><b>D. Learning Process</b></p>

<p><b>D. Learning Process</b></p> <p>1.3 Breadth versus depth of knowledge depth - detail <b>(16)</b></p> <p><b>E. Learning Product, Outcome and Performance</b></p> <p>4.1 Product-oriented <b>(15)</b></p>	<p>1.2 Degree of control <b>(11)</b></p> <p>less time [7]</p> <p><b>Learning Product, Outcome and Performance</b></p> <p>4.1 Outcome-oriented <b>(11)</b></p> <p><b>E. Learning Process</b></p> <p>1.3 Breadth versus depth of knowledge breadth <b>(9)</b></p>
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Sample texts follow (comments relating to higher order intellectual processing are in bold).

*I preferred writing an assignment essay to writing an exam essay as a form of assessing my knowledge of History and Philosophy of Psychology because ....*

**... the assignment essay gave me a chance to look critically at readings and information in depth, and with enough time to actually develop and improve writing skills** while the exam essay was frustrating because it seemed to test your memory of information which is inappropriate to the aims of this course. It is hard to concentrate in an exam and only general information can be remembered.

(Pref. Assignment Essay: 85)

**... I was able to be narrower in my research and extend reading into the topic I was interested in. No rote learning (memorising) but instead a real opportunity to analyse and integrate information from a number of different sources in a focused way. Assignment essay gives opportunity to critically evaluate various views and then present an argument in a concise and logical manner.**

(Pref. Assignment Essay: 119)

*I preferred writing an exam essay to writing an assignment essay as a form of assessing my knowledge of History and Philosophy of Psychology because...*

**... I felt I was more able to integrate what I had learned with other knowledge and experience to come up with a discussion on an interesting query. I felt more free to discuss and question ideas.**

(Pref. Examination Essay: 51)

The remaining categories of reasons, however, differentiate the two groups. Those who preferred the assignment essay appreciated the degree of control they had over the writing



process and especially having time to explore issues and topics (58 comments). They also commented on their affective response to their assessment task (23 comments) in that they experienced less stress than when preparing for their examinations and experienced a sense of satisfaction and involvement when preparing their assignment essays. Preparing their assignment essays allowed them to delve into more depth on their chosen topics (16 comments) and to produce a better quality product (15 comments), again often associated with having more time.

Sample texts follow.

*I preferred writing an assignment essay to writing an exam essay as a form of assessing my knowledge of History and Philosophy of Psychology because ....*

**... I knew what the topic was going to be so I could focus on one area that I chose and liked and felt was challenging** rather than being spread out as the other assessment procedure was; over several topics. **You can go in deeper and get more out of it in an assignment essay.**

(Pref. Assignment Essay: 43)

**... basically I had more time to get involved in it.** Being able to **set the framework of the essay myself** was excellent as it **allowed me to concentrate purely on the areas that interested me the most.** For this subject, facing an unknown question in the exam made me unable to study any parts of the course in detail and rather just gain a general understanding of most aspects.

(Pref. Assignment Essay: 9)

In contrast, the remaining categories of reasons provided by students who preferred the examination essay differed quite markedly from those presented above. While focussing still on the learning process, the second most common reason for their preference was that the examination essay involved lower levels of intellectual skills and abilities (18 comments). These students also commented on the examination essay as an evaluation instrument focussing on task characteristics (16 comments), such as the easiness of the task, when explaining why they preferred the examination essay. The next two most common reasons for preferring examination essays (both 11 comments) were; firstly, having control, and in particular, spending less time on the assessment task and secondly, being focussed on outcome in that they can get better marks, the marking is more lenient, and they are better at examinations.

Sample texts follow.

*I preferred writing an exam essay to writing an assignment essay as a form of assessing my knowledge of History and Philosophy of Psychology because...*

**... it involved a lot less preparation ie it could be based on lecture notes à I found it easier to work from lecture notes** than from actual readings and texts as I had difficulty in comprehending them due to the highly specialised terminology and old English style à the exam essay was **more clear as to what it was asking ie information required to gain a good mark / answer the question.**

(Pref. Examination Essay: 31)

**... I often perform better in exams due to pressure. Also markers expect a lower standard in exam essays and do not require the details such as abstracts and bibliography. As long as you have a basic understanding of the subject matter, you can obtain a reasonable mark.**

(Pref. Examination Essay: 126)

### Criticisms of Alternative Assessment Method

- Criticisms of Examination Essays (by Group A)**

Students who preferred the assignment essay as an assessment form were highly critical of the examination essay. The most common criticism of the examination essay was that it encouraged lower levels of intellectual skills and abilities such as reproduction and regurgitation of knowledge (45 comments). Students were also resentful of the lack of control they had over the learning process, since they did not have enough time or freedom to prepare a better quality product (22 comments). Students found it stressful (19 comments), and were critical of the lack of higher levels of intellectual skills and abilities involved such as reflection, analysis, critical thinking or evaluation of sources (16 comments). The examination essay was also criticised for being unfair, for involving guessing, and assessing writing speed (15 comments), and for emphasising breadth rather than depth of knowledge and understanding (13 comments). There were also several comments on its inappropriateness as an evaluation instrument (12 comments). See Table 3 -the left column- for criticisms of the essay examination by Group A students.

Table 3: Criticisms of Alternative Assessment Method

Preferred Assignment Essay (n=104)	Preferred Examination Essay (n=58)
<p><i>Criticisms of Examination Essay</i></p> <p><b>A. Learning Process</b></p> <p>1.1.2 Lower level intellectual skills and abilities <b>(45)</b></p> <p><b>B. Learning Process</b></p> <p>1.2 Degree of control <b>(22)</b></p> <p>lack of time [17]</p> <p><b>C. Affect and Motivation</b></p>	<p><i>Criticisms of Assignment Essay</i></p> <p><b>A Learning Process</b></p> <p>1.1.1 Difficulty with higher levels of intellectual skills and abilities <b>(8)</b></p> <p><b>B. As an Evaluation Instrument</b></p> <p>2.2 Task characteristics <b>(8)</b></p> <p><b>C. Learning Process</b></p> <p>1.2 Degree of control <b>(7)</b></p>

<p>3.1 Affect (19)</p> <p>stress [17]</p> <p><b>D Learning Process</b></p> <p>1.1.1 Lack of higher level intellectual skills and abilities (16)</p> <p><b>E. As an Evaluation Instrument</b></p> <p>2.2. Task characteristics (15)</p> <p><b>F. Learning Process</b></p> <p>1.3 Depth versus depth of Knowledge breadth (13)</p> <p><b>G. As an Evaluation Instrument</b></p> <p>2.1 Appropriateness (12)</p> <p>poor indicator of knowledge/ability [6]</p> <p>lack of relevance [5]</p>	<p>too much time</p> <p><b>D. Affect and Motivation</b></p> <p>3.1 Affect</p> <p>lack of involvement (5)</p> <p><b>E. Learning Process</b></p> <p>1.3 Depth of Knowledge (3)</p>
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Sample texts follow.

*I preferred writing an assignment essay to writing an exam essay as a form of assessing my knowledge of History and Philosophy of Psychology because ...*

**... the time constraints of an exam limits how effectively I can express myself, plus the stress of the exam period overall is detrimental to my essay-writing strengths.** I like to spend time thinking through a specific issue, then using the assignment essay to display the time and consideration I've given the assigned question. **Exams are too rushed for a good essay, and so tend to be restricted to regurgitating facts & "memorised" passages of text.** You can write a good detailed assignment much better than a rushed exam answer.

(Pref. Assignment Essay: 87)

**... under exam conditions, testing is of memory and speed of writing. Test anxiety is a reality and study dedication is not truly assessed by writing 2 essays in 55-60 minutes. 3rd yr should be more about the ability to read widely and formulate insightful answers given adequate time.**

(Pref. Assignment Essay: 146)

- **Criticisms of Assignment Essay**

There were far fewer criticisms of assignment essays by students who preferred the examination essay than criticisms of the examination essay by those who preferred the assignment essay. The most common criticisms of the assignment essay by students who preferred the examination essay focused on the difficulty they had with such higher intellectual skills and abilities as developing their argument, completing all the reading, and analysing the issues (8 comments). Task characteristics, particularly the types of questions set, received a similar number of criticisms (8 comments). The assignment questions were criticised for being "too hard", "vague", "broad" and so on. Other students resented the amount of time taken in their preparation (7 comments) and commented on their lack of involvement in the task, finding it a "boring", "frustrating" experience (5 comments). Assignment essays were also criticised for requiring a deeper, more detailed understanding of issues (3 comments). See Table 3 - the right column - for a summary of these findings.

Sample texts follow.

*I preferred writing an exam essay to writing an assignment essay as a form of assessing my knowledge of History and Philosophy of Psychology because...*

... I knew that if I learned and understood the ideas presented in the lectures and recommended readings, I'd be certain to pass, whereas **when doing the assignment essay, you needed a much more deeper understanding of issues and you needed you're own opinion on those ideas, which is more difficult.**

(Pref. Examination Essay: 78)

... it means less of your own time and your own ideas and more regurgitation. **With the amount of work to do in other subjects, an [assignment] essay takes too long to research understand and write analytically which tutors and lecturers don't often appreciate anyway.**

(Pref. Examination Essay: 164)

## **Issues**

### **Issue one: approaches to learning**

From the reasons provided above it is possible to categorise students as having either 'surface' or 'deep' learning approaches. In this paper, the terms 'surface', and 'deep' refer to different conceptual levels of thinking about learning and assessment and are similar to those originally proposed by Biggs (1979). The term 'surface' refers to a strategy aimed at reproducing rather than understanding material, and a motive to pass with minimal effort and interest. The term 'deep' refers to a strategy aimed at understanding and engaging with course material and reveals a sense of interest and enjoyment in learning.

It can be seen from the students' reasons for preferring an assessment method and from their criticisms of the alternative method that those who preferred the assignment essay were more likely to be deep learners and those who preferred the examination essay were more likely to be surface learners. This is supported by the quantitative data analysed and reported previously (Scouller & Chapman 1999).

### *Issue two: reference to the preparation process and time*

It has already been mentioned that both groups of students most frequently mentioned the higher order intellectual abilities and skills involved in the writing process when giving the reasons for their preferences. Those who preferred the assignment essay however clearly associated these skills and attributes with the availability of time. According to these students, having time allowed them to engage in research and wide reading, to think, learn and understand, to explore, develop and alter their views and judgements on topics and their readings, to analyse, criticise and synthesise, to evaluate and cross reference information sources, to construct and organise facts and to provide evidence to support their viewpoint. The above higher order intellectual skills and abilities of reflection, comprehension, analysis and synthesis are associated with deep learning approaches.

The majority of these responses also presented negative views of the lack of time involved in writing an examination essay. These comments typically criticised the time constraints inherent in examinations which forced them to rush and "scribble" their answers, and gave them no time to think, to integrate or develop ideas or judgements. Lack of time meant that students could not critically analyse issues as they would wish, and their responses were not a true reflection of their ability or the effort they had put into their study. Students also found that the time constraints were stressful and led to panic, confusion and forgetfulness. The above responses were again similar to those expressed by the students in the other two studies (Scouller 1999, 1997).

### *Issue three: students' attitudes to examination*

As in the two previous studies, students were far more critical of their examination than they were of their coursework assignment. Students were critical of the examination for focussing on memory rather than learning, for encouraging regurgitation of information rather than allowing them to demonstrate their knowledge and understanding, for being stressful, and for not being an appropriate assessment instrument. However, the level and content of criticisms were not as vitriolic and passionate as in study I (Scouller 1999, 1997) where students expressed enormous resentment towards the multiple choice question examination as an assessment method.

### *Issue four: breadth versus depth of learning and knowledge*

Another issue that emerged, although less strongly than in the other two studies, is the issue of breadth versus depth of learning. Students who preferred writing the assignment essay appreciated the opportunity to delve in depth into a topic of their own choosing and criticised the examination essay for not providing that opportunity. Again associated with the availability of time, these students gained satisfaction from and greater involvement in studying a particular topic of interest and enjoyed being able to demonstrate analytical and research skills, and having the opportunity to produce a better quality essay.

In contrast, those who preferred the examination essay were more likely to appreciate learning about a broad range of topics, a more superficial coverage of general issues. The advantage of studying more topics less deeply (breadth of knowledge) for many students was gaining an overview of the main points and general issues. Breadth of knowledge was also associated with a lack of involvement in their studies and a few students reported that the examinations forced them to study more topics which they would not have done otherwise. And preparatory study involved less effort, with students being able to focus on lecture and tutorial notes and do no extra reading.

### *Issue five: reference to feelings*

Having time was also associated with feelings of satisfaction and interest - a sense of control over the learning process and less stress. Those students who preferred writing the assignment essay were more likely to comment on the learning experience as enjoyable, rewarding and interesting when they could choose the topic according to their own interests, engage in interesting reading, and control how to structure and communicate their own understanding of a topic. In contrast those who preferred the examination essay made very few references to feelings of involvement and satisfaction with their efforts.

## **Conclusion**

The findings in this study raise important educational issues. Firstly, they reinforce the important role that assessment method plays in our students' learning. Students have quite definite and strong opinions about the way they are assessed and have little difficulty in expressing their preferences. It is not a topic they feel indifferent to.

As in the earlier studies this research found a strong preference for a coursework assignment essay in contrast to an examination, even an examination essay, and the students provided sound pedagogical reasons for their preference. Their attitudes towards and perceptions of the two assessment methods revealed cognitive and affective dimensions. The majority of students discussed assessment in terms of their learning and preferred a method that both encouraged higher levels of intellectual processing and allowed them to demonstrate these skills. They also discussed their learning more in terms of process than product and outcome. And closely linked with process was their recognition of the importance of having time and feeling a sense of involvement with the task and of satisfaction.

It is also important to note that of the 3 different kinds of examinations investigated in these studies, the examination essay is the only assessment method where students gave higher levels of intellectual processing as the main reason for their preference. Many students who preferred the examination essay believed that it provided the opportunity to develop and demonstrate deeper strategies and higher order intellectual skills and abilities. However, as in the other two studies, the majority of students, those who preferred the assignment essay, were highly critical of the examination essay for encouraging lower levels of intellectual processing, for not providing enough time for them to demonstrate their learning and understanding, and for being stressful.

The role of examinations needs to be reassessed.

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