

“What do I do here?”: Higher Order Learning Effects of Enhancing Task Instructions

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Abstract

This paper reports the findings of a one-year research project focused on a series of structured interventions aimed at enhancing task instruction to develop students' understanding of higher assessment practices, and encouraging higher order learning. It describes the nature and iterations of the interventions, made into a large-enrolment online first-year foundational academic skills unit, and analyses the effects of these interventions. The conclusions drawn are that student comprehension of assessment practices can be improved significantly through the expansion and explication of task instructions, and that these improvements may be transferable to other large, first year and online teaching contexts.

Keywords: Task instruction, Online learning, Discussion forums

1. Introduction and review of literature

Constructivist learning approaches invite active enquiry techniques and as such are often problem-based (Anderson 2010). As Anderson notes, 'these problems often work best when they are ill-structured, open ended, and messy, forcing learners to go beyond formulaic solutions and to develop their capacity to develop effective problem-solving behaviours across multiple contexts' (Anderson 2010, p. 28). The description of assessment items in task instructions, on the other hand, needs to be clear-cut, well structured, and with defined boundaries, in order to deliver the transparency required by quality assurance agendas. Providing minimal guidance in instruction within an overall problem-based learning approach is inefficient, ineffective and can result in poor student performance (Kirschner, Sweller & Clark 2006) since students find additional explanation of task instruction valuable to assist comprehension and sense-making of assessment criteria and requirements (Rust, Price and O'Donovan 2003). When it comes to providing task instruction, the amount and type of guidance provided to a learner matters, as does the student's content knowledge and skill level. As Merrill (2007) argues, '(f)or learners already familiar with a given content area unstructured exploratory learning approaches may be appropriate, however for learners who are novice in a content area, learner guidance is essential' (p.6).

In the online learning context, there is an absence of visual and verbal cues, as in the face-to-face tutorials to which usually fall the task of unpacking upcoming assessment items through direct instructional learner guidance. However, as Rust Price and O'Donovan (2003, p. 151) 'the imprecision inherent in passively presented verbal description requires that consideration be given to other ways of achieving shared understanding of criteria and standards'. In online learning, therefore, there is an opportunity to explore these 'other ways' of achieving learners' understanding of assessment criteria and standards through the provision of learner guidance in task instruction.

To date there is little specific data on how online university students comprehend task instructions, or studies of how teachers might intervene to improve their online students' understanding of assessment criteria. What is known is that students often perceive little correlation between learning and assessment practices (Boud 1995); that they can regard the use of criteria and rubrics as too generic to be useful (Chardon *et al* 2011) and that many students simply don't understand assessment criteria provided to them (Higgins *et al* 2002, p. 57; Sadler 2010). In their survey of the literature on task instructions, Mason, Scirica and Salvi (2006) note the possibility of eliciting "richer cognitive and emotional reactions" via the manipulation of task instructions, and suggest that novice students benefit from more specific instructions. The explication of task instructions and criteria and is part of the future-oriented 'feedforward' approach (Sadler 2010, Carless 2006). Following Sadler's (2010) argument that feedback begins when teachers

specify the exact nature of the task students are required to complete, Baker and Zuvella (2012) extend the 'feedforward' approach to task instruction from unit outlines into the incorporation of assignment tasks, criteria and modelling in course materials.

Rust, Price and O'Donovan (2003) found that the introduction of socialization processes to involve students in the explanation and practice of marking against criteria may be effective in developing the shared understanding of 'useful knowledge' between teachers and their students, but as they note, '(f)or most institutions, reliance on these resource-intensive methods is difficult, if not impossible, in the context of today's rapid expansion of student numbers and cuts in the unit of resource' (p. 162). On the other hand, Liaw (2008, p. 865) argues that environmental characteristics such as asynchronous interaction 'create a high-level communicative environment that allows learners not only to share information, but also to determine how to retrieve useful information'. Therefore, valuable insight into how learners comprehend and respond to task instructions provided is to be found in the platforms enabling asynchronous interactions – discussions between learners, and questions asked directly of teachers on discussion forums.

How might teachers of online classes develop an understanding of how their students are reading and understanding task instructions, and how much (more) guidance their learners require? One avenue might be the comparison of student performance – the higher the resulting performance, the greater compliance against criteria and its quality, and thus the more appropriate the assessment instruction provided to students. However, as entry barriers are removed and student intakes increase (see Parker 2013; *The Demand Driven System* 2013), comparison of performance year to year or even semester to semester will necessarily reflect this broad political-economic reality. For a more fine-grained approach, we can look to the students themselves and specifically, the questions they ask about assessment tasks, criteria and quality, to gauge the success of various interventions in these areas. In the online context, one instrument by which the clarity and effectiveness of task instructions provided is measurable is the analysis of the nature and frequency of students' assessment-related comments to group discussion forums.

2. Research Question: *What are the effects on student questions of enhancing task instructions in a large first-year foundational unit?*

This project analyses and evaluates the effects of successive interventions into assessment design and resources in a large online first-year foundational unit. It reports on the effect of three successive interventions into task instruction and criteria provided in course materials and in teaching interactions by measuring students' Discussion Board (Db) activity in the Assessment Forum prior to the "mid-term" assignment, Assessment Item 2 (A2) over four consecutive study periods.

3. Background:

The unit is a core, foundational study skills unit, delivered online via a Blackboard learning management system (LMS), by a medium-sized Australian research and teaching university. A learner-centred approach to instructional design in this unit translates into study materials that include a textbook; a Study Guide based around an authentic learner-teacher dialogue and explicit skill instruction across four modules; and an optional asynchronous discussion forum. The unit attracts a very large, diverse and interdisciplinary cohort of between 1000-2500 enrolled students every Study Period. Study Periods consists of 13 weeks, and are run consecutively with four per calendar year.

In addition to weekly course learning activities offered on the Discussion Board (Db) are the highly active assessment forums. These forums are critical to the student experience of the unit's induction to academic assessment practice; as William (2011) notes, 'the design of effective formative assessment cannot be detached from the milieu in which it is undertaken' (p.5). The assessment forums operate as vital pedagogical tools to encourage help-seeking behaviours important to self-regulated learning (SRL). As Dabbagh and Kitsantas (2005) note, key tools such as discussion forums have proven to be "highly effective in activating the use of SRL processes necessary to support specific types of learning tasks required for completion of course assignments" (p. 513).

4. Research Methodology:

As interventions to enhance the student experience of this key unit are ongoing, the research methodology to evaluate the success of strategies introduced needs to be flexible, grounded and capable of addressing iterations. Design-based research suits this task. After Wang and Hannafin (2005), design-based research is defined as "a systematic but flexible methodology aimed to improve educational practices through iterative analysis, design, development, and implementation, based on collaboration among researchers and practitioners in real-world settings" (pp.6-7). Reeves' three cornerstone principles further explain this framework:

“(1) addressing complex problems in real contexts in collaboration with practitioners; (2) integrating known and hypothetical design principles with technological advances to render plausible solutions to these complex problems; and (3) conducting rigorous and reflective inquiry to test and refine innovative learning environments as well as to define new design principles” (2006, p. 58).

- Phase 1 (1.0): early 2012

In this first phase of the project, with the rollout of a new unit aimed at developing entry-level students’ foundational critical thinking and academic research skills, the emphasis was on tutor training and the development of aligned learning activities. Tutors were selected for their experience in online and/or large group teaching, willingness to respond promptly to student queries online and provided with training and resources to guide their daily interactions with students and to model “feedforward” in all assessment discussion as well as in marking practice.

Learning activities for each week were provided in course materials and on the Discussion Board, which in the first iteration consisted of a single group managed by a team of tutors. The Discussion Board was divided into numerous forums, including weekly forums for course work, individual forums for each assessment items, technical help and general questions. The Assessment Item 2 forum was “pre-loaded” with prompts by tutors to encourage discussion of the task and specific criteria. These consisted of open-ended, Socratic questions designed to stimulate discussions around key assessment concepts, such as discussions about the authority of sources and ideas about paraphrasing and quoting. This forum attracted a very substantial volume traffic that indicated clearly the need to focus on this forum and task instruction in subsequent iterations in the design-based research cycle.

- Phase 2 (2.1.0, 2.1.1, 2.1.2, 2.1.3, 2.1.4): late 2012

Following reflection on and evaluation of the experience of the first phase, an extensive expansion of the course materials was undertaken over the subsequent two Study Periods. The interventions in this iteration included significantly expanded task discussion and instruction in the study guide, expanded criteria sheets and rubrics, as well as additional learning resources and activities provided both on discussion boards and in assessment folders on the LMS. Teaching resources were also expanded.

Focus group sessions with tutors provided rich feedback on common student queries and performance issues in assessment. This enabled the revision of task instruction and criteria and learning activities provided. From Phase II, the cohort was divided into multiple smaller groups on parallel Discussion Boards, which operated simultaneously and independently. Two tutors managed each smaller discussion group, overseen by a head tutor. In anticipation of high volume of student interaction, the Assessment Item 2 forum in Phase II was pre-loaded with twice as many discussion prompts feeding into task completion. Responding to the students’ ongoing desire for explicit instruction, in this Phase, the prompts were less Socratic and more directly instructive and again this forum universally attracted the peak of student traffic.

- Phase 3 (3.1.0, 3.1.1, 3.2.0, 3.2.1): late 2012 and early 2013

The third phase of the interventions involved further revision of study materials, expansion of task instruction and learning activities, and further feedback and evaluation from the teaching team. As per the design-based research model, the collaboration with practitioners led to a greater refinement of the materials and activities, and the integration of design principles with technological advances (in this case, the evolution of the Blackboard LMS to Blackboard Learn, which offers greater functionality in some aspects of group management). Multiple Discussion groups managed by teams with the head tutor oversight were again employed as were numerous pre-populated A2 Discussion Board prompts and activities designed to feed forward into this assessment item, and future assessment success. The refinement of task instructions in this phase involved another expansion of the criteria rubrics as well as the provision of grade-related descriptors.

5. Data Analysis:

5.1 Assessment Item 2 Focus:

Following the completion of Phase 3, data analysis commenced. Data analysis focused on the Db forum dedicated to Assessment Item 2 (A2) for a number of reasons. As already noted, this is consistently the forum, across all Discussion groups, which experiences the peak of student traffic. As A2 is, for a very large percentage of the cohort, the first assignment ever undertaken at university, there is an understandable level of student anxiety and urgency around this assignment. (A1 is an online, multi-choice, multiple attempt quiz weighted less than A2 or A3). From a pedagogical point of view, the assessment is of prime importance as a challenging critical thinking task which, due in mid-semester, has a vital formative role in testing learning objectives within the overall assessment design. As the

busiest and most ‘stressful’ forum on the Db, the A2 forum requires the greatest commitment of time, responsiveness, patience and expertise on the part of teaching staff.

5.2 Coding the data from the Dbs:

The data was coded in order to create a systemic approach that would be both broadly applicable to other professionals analysing student populations. Coding for this research project drew on the specific experience of teaching this unit. The coding process involved the assignation of posts to one category for manageability (though it is acknowledged that some posts could belong to multiple categories). The coding process included teacher responses to student posts since the emphasis is not just on the student help-seeking but the staff time, type of interaction and actions (e.g. revising instructions) it initiates. On average, it takes the coder about 12 hours to code the discussions in a single forum for this assessment item. A third researcher, a tutor who has taught across all Phases of the project, was provided with the metric (below) and a detailed explanation of the coding categories and required coding process. The researcher then undertook a coding sample from one of the largest discussion groups in Phase II. The same section was then re-coded by the project’s main researchers. This independent evaluation arrived at very similar conclusions to the project’s researchers. The consonance of the two sets of data mitigates the issues of subjectivity and interpretation in the coding and supports the reliability of the research findings.

5.3 Developing a metric for Db posts:

The categories for coding were drawn from critical reflection upon the most frequently noted issues and practices recognized by the teaching staff, and were guided by the focus in this research project on the high degree of interaction in teaching practice, and the impact that enhancing the instructions would provide. The coding process was informed by Kay’s (2006) advocacy for the revised version of Bloom’s Taxonomy developed by Anderson & Krathwohl (2001) and by numerous other contemporary proponents of this schema (Christopher et al. 2004; Gilbert & Dabbagh 2005; Schrire 2006). This type of taxonomy identifies different types of thinking: knowledge sharing, clarification, exploration, analysis, synthesis and evaluation.

After Kay (2006), the coding process foregrounded the knowledge and processing level of discussion board messages into categories. These categories reflect the main types of procedural, conceptual and factual knowledge relevant to this discussion, and processing levels of understanding, remembering, analyzing and evaluating.

5.4 Explanation of categories (ranked from ‘highest’ to ‘lowest’ order):

Application: Students ask questions that display “higher order” thinking skills that indicate they are attempting apply course concepts to their research/analysis. These queries involve significant critical thinking or advanced reasoning. There are fewer opportunities for this kind of post in this particular situation due to the instrumentalist function of the forum. However, there are occasions whereby students with a clear grasp of task requirements post messages that indicate the “deeper” approaches to learning characteristic of the higher order objectives of analysis, synthesis and evaluation representing engagement with critical thinking. Examples might be, “If my research locates an essay by a famous journalist in *The New Yorker* which seems to contradict findings from a UN report on the same topic, which is the more authoritative source?” or “How should I frame policy differences between State and Federal agencies when I am analyzing specific data?” These **Application** posts are the only kind of question that has no obvious answer to be found by recourse to course materials or basic commonsense, and in which the tutors’ expertise in specific content/disciplinary knowledge, and academic judgment is required. These are the only type of message that corresponds to knowledge and processing levels that are conceptual and about analyzing and evaluating.

Social Learning: Student-student (or peer-peer, or collaborative) interactions – may be about choices in content areas, or other related content. Peer learning is highly regarded in teaching and learning literature but difficult to establish in a very large online unit in the open context when many students have work and/or family commitments that prevent them from maintaining regular access. Furthermore, research shows that peer interaction is suited to more controversial issues without specific/concrete answers (Blignaut & Trollip 2003; Burstal 2000) – the opposite of a high-traffic, high-intensity mid-semester assessment forum.

Peer or collaborative learning in this specific context is complex, since while student support for and interaction with each other is desirable for the learning group as a community of enquiry, it is also problematic if students provide each other with incorrect advice. In the case of this assessment-focused discussion forum, most peer-peer interactions take the form of discussion of content choices (for example, topics for assignment and their relationship to future career choices or past experiences). Each study period tends to feature at least one highly active, constantly online and very sociable self-appointed “leader”, who appears to enjoy helping other students (“Our teacher already mentioned that in Monday’s email” “The articles you need are located under Course Content” on the unit website)

and tends to offer non-controversial advice based on familiarity and confidence with the location of learning materials and detail of task instruction. Therefore posts were coded as involving social learning if they involve ‘significant social interaction leading to effective knowledge building’ (Kay 2006; also Garrison et al 2001). This category can potentially involve all knowledge/processing levels, but in practice tends to be primarily factual and procedural.

Clarification: Students ask questions about how to do the assignment, or about a specific aspect of the assignment. Teachers provide direct instruction. These are course-specific questions, sometimes idiosyncratic (i.e. a student may interpret an instruction in an unexpected way “How can I do the Critical Analysis if I’m not a negative person?” “Can I use sub-sub-sub-headings in my Literature Review for themed sections?”). Because of this degree of specificity, students will not find the answers in a regular internet search. They may find answers in their study materials, but do not always read these materials or read them thoroughly, or furthermore, may not understand precisely what they are being asked to do. Many of these posts also appear to be seeking confirmation that the student is “on the right track” or has interpreted the question correctly. According to the revised taxonomy, this corresponds to knowledge/cognitive processing that is primarily factual, functional/useful and also often procedural. At the processing level, this category involves understanding and remembering.

Administration: Students ask questions about administrative aspects of the assignment e.g. latest possible submission time, point at which exceeding the word limit will result in penalty, extensions, formatting questions, queries about whether the assignment has been received, queries about how to retract a draft submission accidentally uploaded. These are categorically different to Clarification since they do not require knowledge of the course content or disciplinary specialty (an outsider reading the instructions provided in various study materials could answer many, if not most of these questions). In the experience of the teaching team, such queries occur with considerable and increasing frequency, especially from late engagers as assessment deadlines approach. Administration queries are taxonomically procedural.

Remedial: Student asks a question that appears to demonstrate a basic lack of competence in communication/study skills, or otherwise appears to be not yet ready to undertake university-level study. For example, “how do u create a word doc”.

Panicked: Student displays significant anxiety in posts. Often signalled with many exclamation marks and/or capitals, and key words such as “help” “freaking out” “stressing out” “stressed” or others indicating distress (“begging” “desperate” “losing it” etc). These are regarded as potentially detrimental to group morale, due to their propensity to be contagious and so to be avoided if possible. Taxonomically, these are usually procedural and/or factual, and negatively correlating to understanding and remembering.

Combustible: Defensive attributions for non-comprehension of task requirements (“This assignment is stupid” etc) – “acting out”. Displays hostility/aggression, contempt, attacks the assignment, topic, method, materials, teachers, etc. Regarded as incendiary by the teaching team, and usually removed, the details recorded and student contacted to discuss appropriate conduct online. Extreme cases or repeat behaviour is grounds for temporary ban on posting to the discussion forum (though access is retained). It is unclear which knowledge and processing levels these posts correspond to.

6. Research Findings:

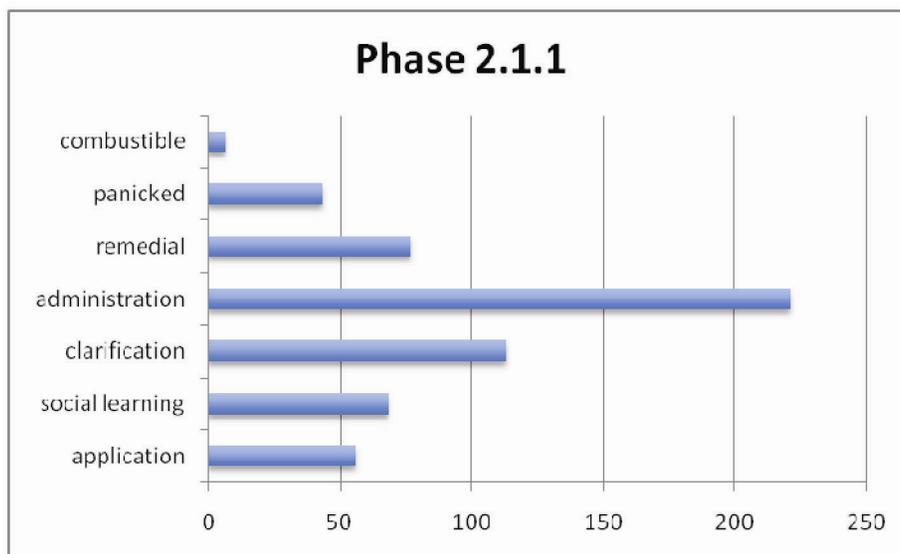
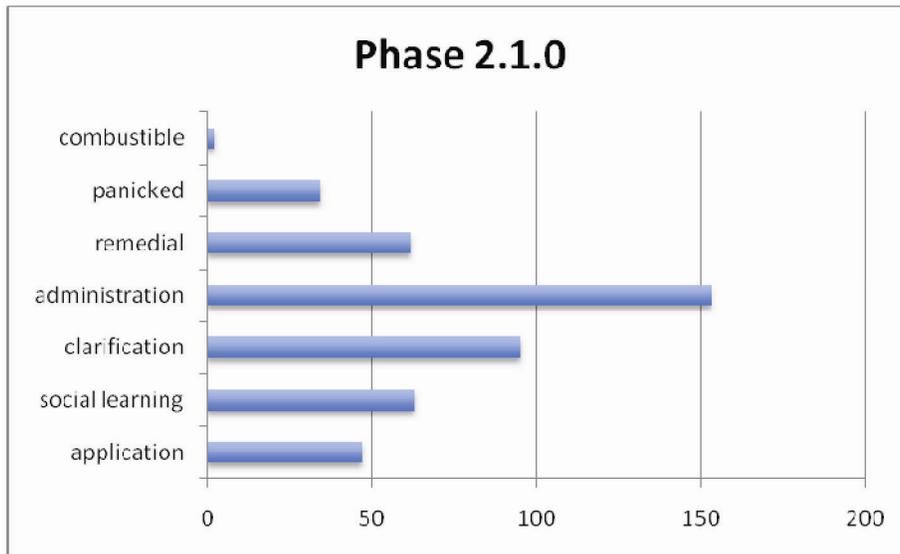
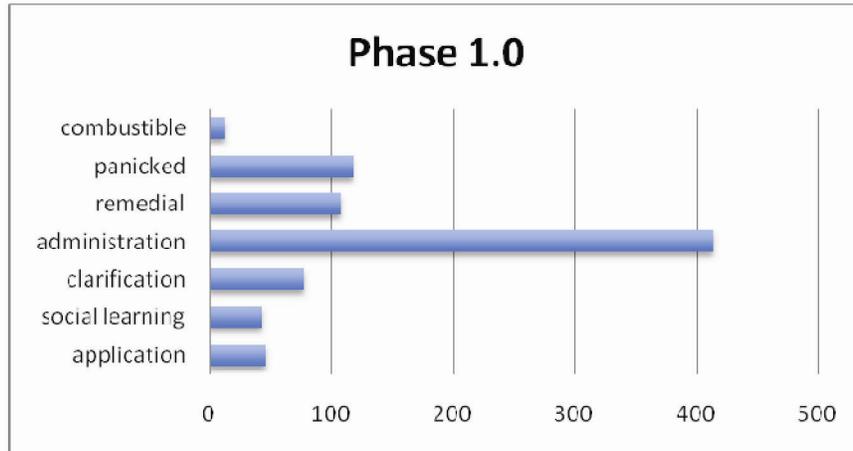
Content analysis of the interventions across the three Phases analysed and coded in this project reveals that the A2 forum’s use is almost exclusively pragmatic:

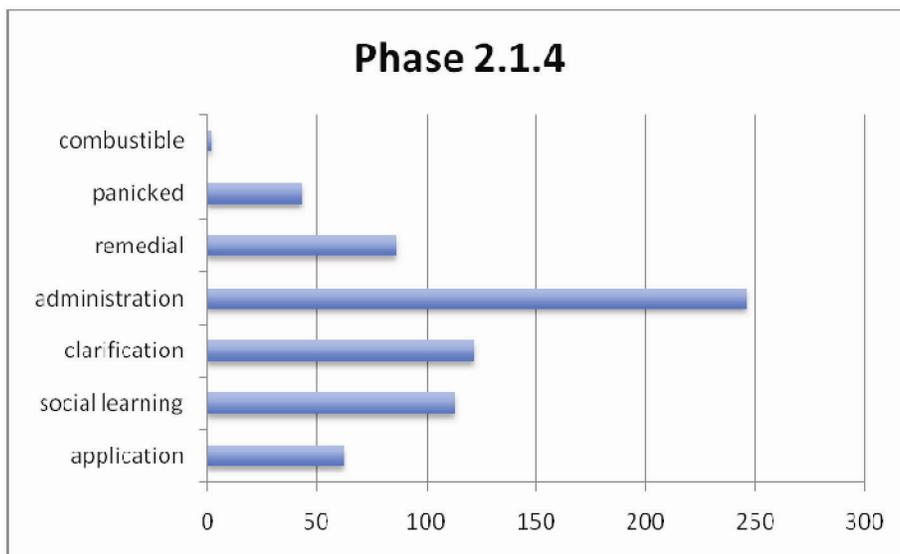
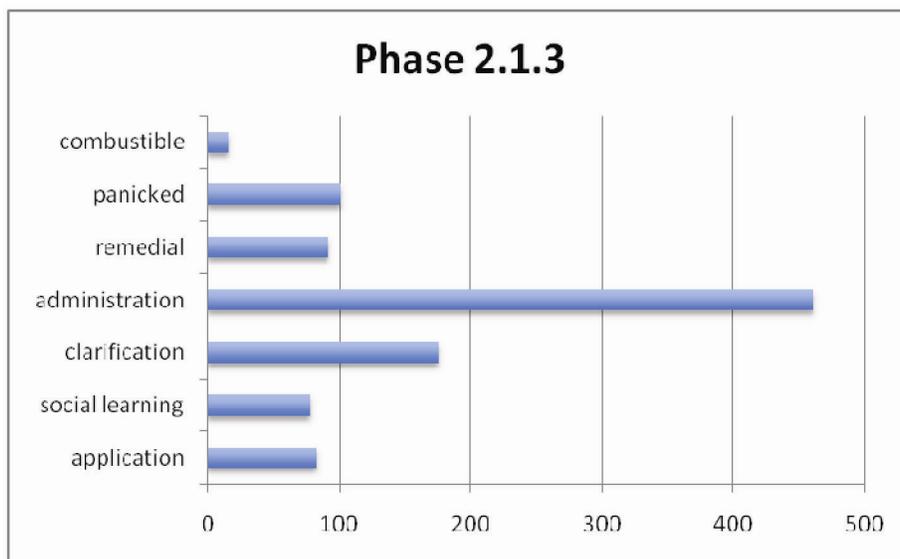
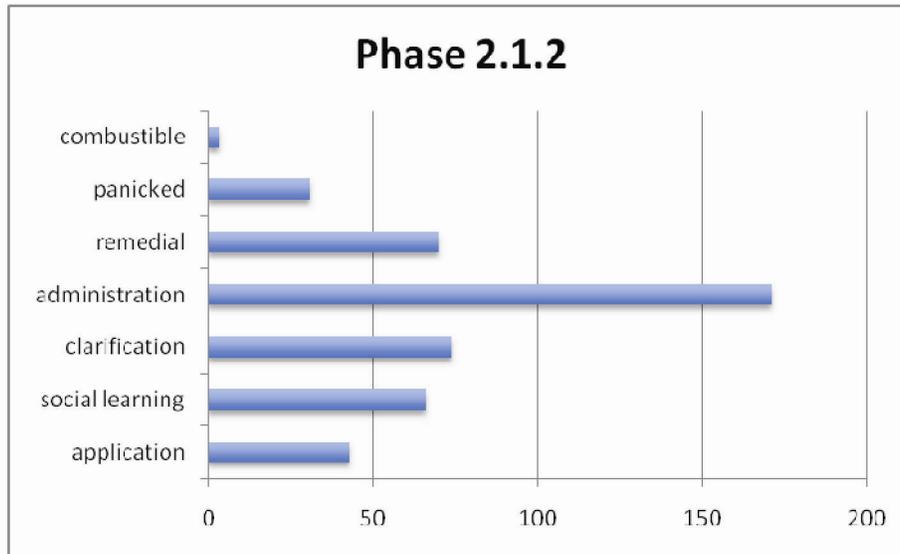
- It is a help-seeking space rather than space for discussions, reflections or activities
- **Administration** and clarification dominate
- **Application** is a smaller number but responds to intervention
- **Social learning** is a smaller number but responds to intervention
- **Panicked** is a smaller number but responds to intervention
- **Combustible** is a stable minimal category
- **Remedial** is a stable significant category

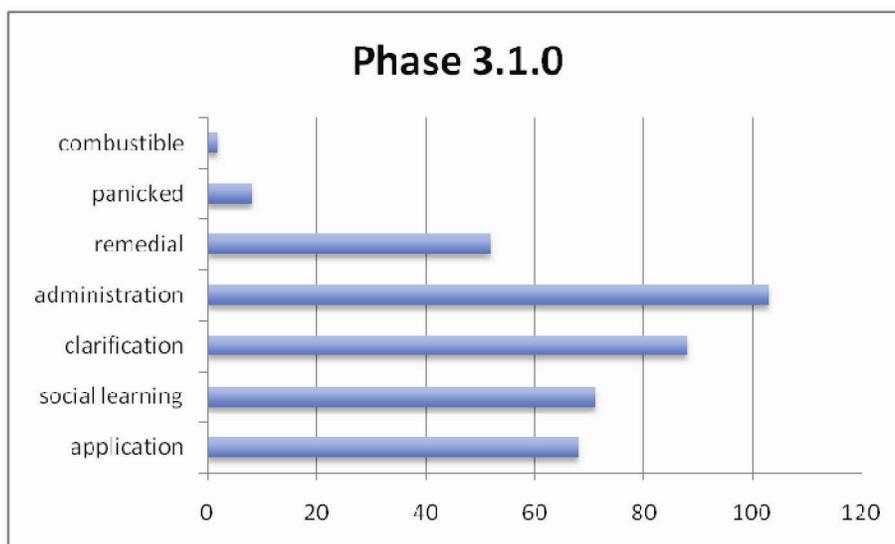
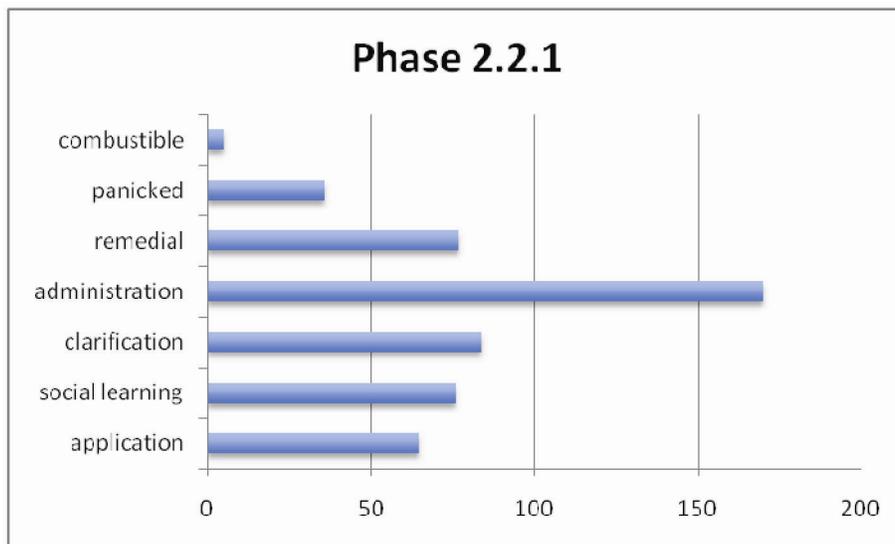
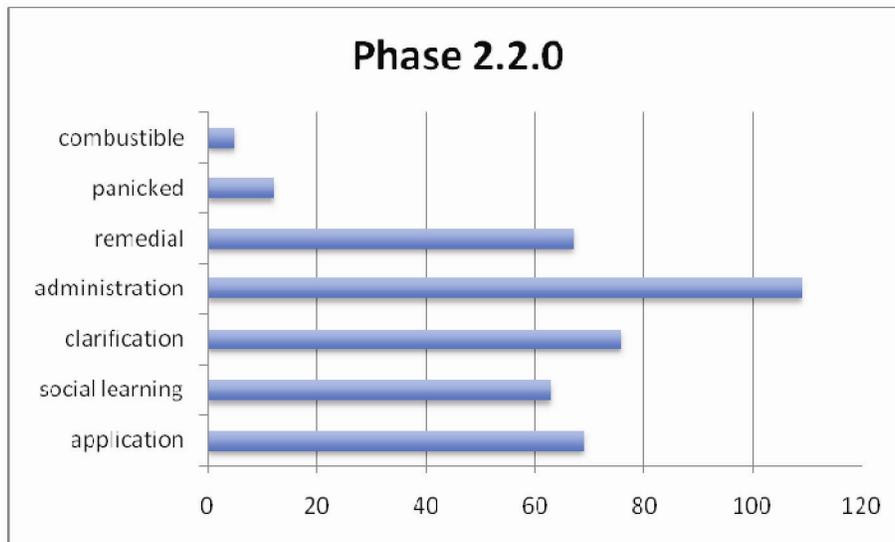
It is important to note that Phase one refers to the initial offering of the course prior to any enhanced instructions, Phase two shows the introduction of more specific instructions and Phase three includes the observations of what

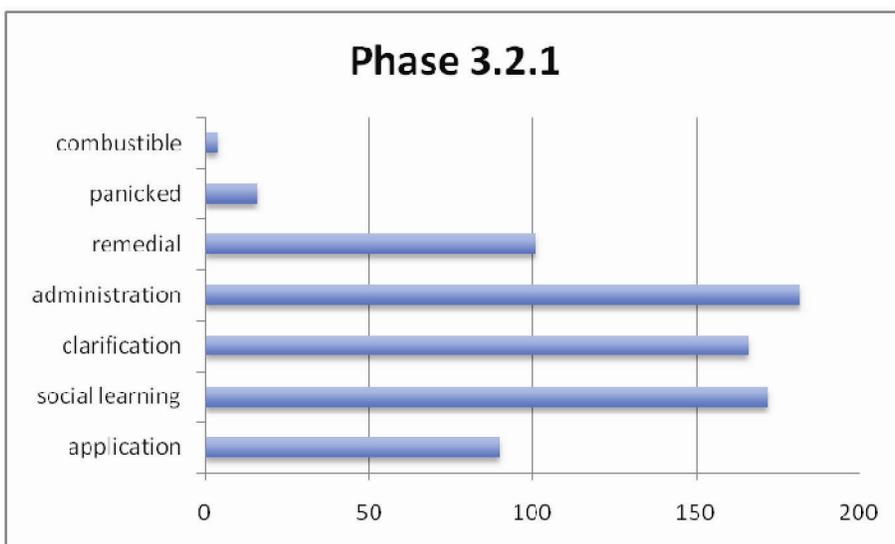
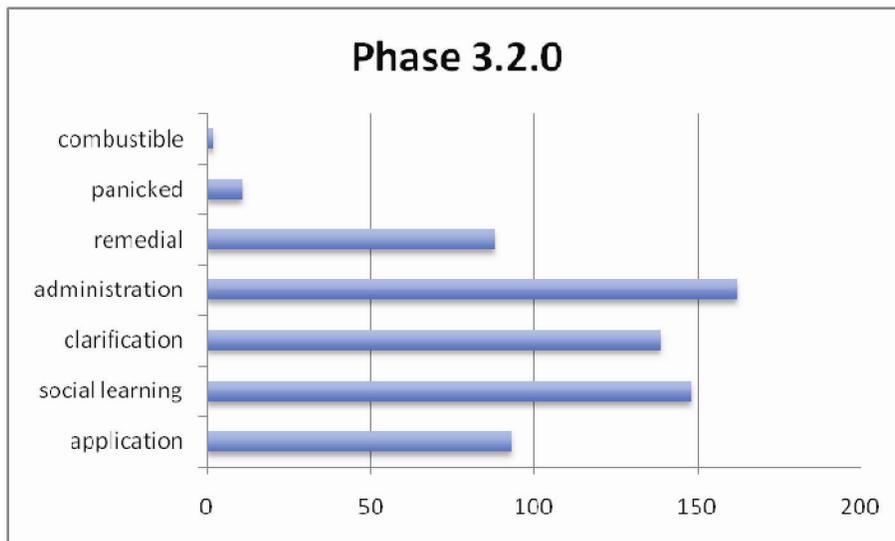
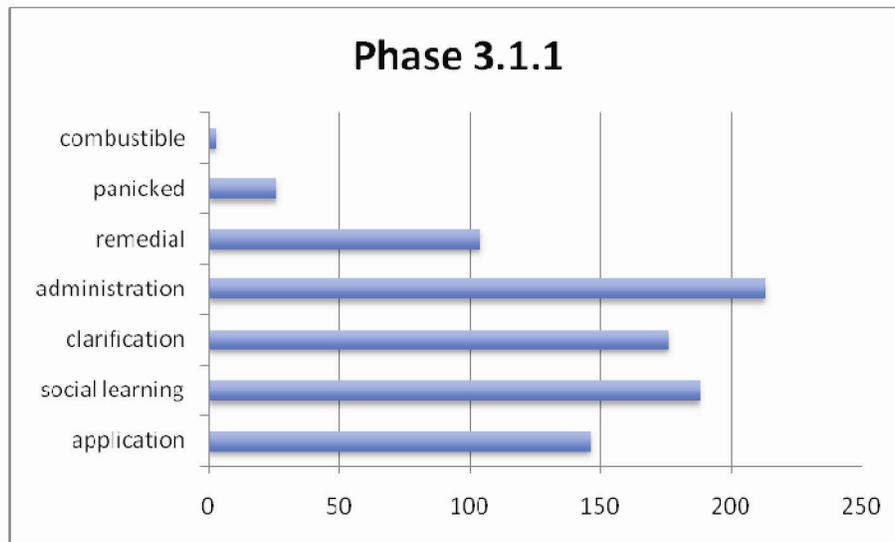
happened with the enhancements as well as continuing developments. Phase two was introduced in the second offering, with a new and larger cohort of students.

Data Samples – Coded Discussion Board postings









The findings here show that in the different categories there were a number of obvious changes. The level of panicked posts dropped with more specific instructions, while the remedial element was highly variable. Administration issues remained the area which required the most attention, and clarification, social learning and application varied widely.

7. Discussion & Implications:

Analysis of the impact of interventions over the course of the research period suggests that after the introduction of Phase 2, and especially in Phase 3, there is a noted **reduction** in number of **Administration** and **Panicked** posts. In addition, there is an increase noted in posts categorized as **Application**.

Furthermore, information acquired by direct questioning of university technical staff indicates a marked drop in technical support calls and emails from students. Though the university's support service system is not equipped to harvest specific data on the number of support calls for this particular unit, the three members of the support team who have overseen and advised some of the major technological interventions into the course LMS, indicated that the trend for panicked and administrative calls for students was dramatically downward following the introduction of Phase 2. Though anecdotal, their responses should be included in the overall measurement of the efficacy of the project interventions as they are often the "first responders" when online students have an assessment crisis situation and so are in a position to draw strong conclusions.

The research from this analysis shows that the enhancements to task instructions and criteria, and the additional guidance provided to the teaching team, have resulted in some measurable evidence of the desired goals:

- 1) Students are asking fewer "middle order" and "lower order" questions and more "higher order" questions
- 2) Student anxiety around assessment items has reduced
- 3) Extraneous processing representing less efficient use of human resources has been reduced

Interestingly, this research shows that the overall traffic, or volume of student posts has not noticeably reduced following interventions. However, and more significantly, the post *quality* is shifting slightly towards higher-order thinking as students ask more complex and conceptual questions.

These findings are in line with numerous positive reports of learner-centred management of asynchronous discussion forums (e.g. Vonderwall *et al* 2007; Palmer, Holt and Bray 2008; Wood 2010). This research echoes and extends the body of research into the specific affordances of threaded discussion forums that do not compel participants to occupy the same geographic or temporal space, and confirms key findings about the role of time by Meyer (2003), that properly supported learners in this context may be stimulated to develop higher order thinking skills.

7.1 Implications from the for future iterations

Research shows that some strategic learners do not use knowledge tools such as the Discussion Board because of the need to balance efficiency concerns with effectiveness concerns (Abrami *et al.* 2011). Tutors in this unit estimate that between 10-30% of students do not post questions publicly but prefer to contact teachers directly over email; as one tutor noted, "Even when I've asked them to post their questions in the public forum where the answer will help their peers, I can reliably count on around a quarter of students to contact me directly at their convenience". Apart from the situations involving personal matters, individual consultation between students and tutors is not sustainable in large-enrolment online units, especially when these are more often than not administrative queries that are answered elsewhere in an easily accessible location in the LMS. In the analysis of student posts, it is clear that many of the 'administrative' and 'clarificatory' questions are already answered in course materials. Further analysis of student questions reveals a common refrain to be 'I know I've seen this somewhere but can't remember where'. The strategic use by some students of the Discussion Board, not to supplement their reading of course materials, but to replace it, needs to be balanced against those for whom the entry to university-level study is overwhelming, and the social space of the Db the key to maintaining engagement and course completion. A similar balancing act takes into account the role of "lurking" and "watching" on the Discussion Board, which correlates to Lave and Wenger's (2002) social model of learning through what they term "legitimate peripheral participation", whereby newcomers (and, by extension, less confident members) of a community of practice may be included in a learning process that acts as a pathway to increasingly sophisticated engagements with community practices. These two learner-centred considerations – the role of the Db to provide information as well as facilitate social interaction and discussion – must be brought to bear on evaluations and even definitions of the Db's "effectiveness".

With the data from this research, it is now possible to anticipate student queries, especially in the Clarification and Administration categories, with other measures which enact the five principles for reducing extraneous processing

(coherence, signalling, redundancy, spatial contiguity and temporal contiguity) advocated in evidence-based research (Abrami *et al* 2011, p. 91). With this in mind, the next iteration of this research will be the further expansion of the task instruction resources in the form of an extensive set of Frequently Asked Questions to model help-seeking behaviours in the authentic language of student enquiry. These Frequently Asked Questions will appeal to strategic learners and students whose time poverty prevents them from closely reading instructional materials within course work or who fall behind due to work, family or health circumstances and need to catch up quickly. Whether or not these Frequently Asked Questions should be placed on the Discussion Board or in a separate location is a matter of some discussion among the teaching team.

While the existing pre-populated threads on the Assessment Item 2 forum of the Discussion Board – activities and question-based task instructions – tended to receive high number of views early in the unit, eager student posts soon pushed these off the first page, where they then tended to be overlooked. As the student-centred pedagogical culture of the unit encourages students to start their own threads to questions that are not answered elsewhere, and with a cohort of students ranging from the highly technologically competent to those new to the online context, it appears likely that this high turnover of Discussion Board pages will continue. The limitations of the LMS format are well known – modelled on “transmission models” of learning (Apedoe 2005), unsuited to social constructivist practices and with key structural deficiencies regarding the management of student interactions (Papastergiou 2006). The use of Discussion Board summaries – a compilation of the key themes and advice from each week’s discussions – has been trialled in other units, but suffers from the same problem of its logical home being another post on the Db. Even with the recent significant improvements of the upgrade to Blackboard Learn (aka Blackboard 9), the LMS currently used by many higher educational providers pales in comparison to the educational affordances of other user-centred discussion forums, such the popular discussion site Reddit.

To try to further stimulate important help-seeking behaviours in students, and to acknowledge that organisation of the LMS must be structured around the “principle of least effort” (Abrami 2010), learning design needs to be focused on *ease of use*. The principle of “active redundancy” – the incorporation of redundant components to safeguard against individual component failure – can be more widely applied throughout the unit. In pedagogical practice, this will mean far more repetition of key messages in course communications, and the replication of identical task instruction and criteria across study materials and in various locations on the LMS, including the Discussion Boards but also in assessment and other resource folders.

Furthermore, since research into discussion board shows that instructor response prompts in asynchronous discussions may result in increases in complex thinking, substance and quality of student messages (Giacumo 2012; Klisc *et al* 2012; Meyer 2003), further interventions will involve more instructor prompts and learning activities on the A2 assessment forum. Learning activities related which aim to engage students in discussions of the higher-order Application and Social Learning categories are being developed. One of these activities involves the use of exemplar assignments for “practice” marking and discussion, which other research has found useful for Rust, Price and O’Donovan found useful for explaining criteria and quality to students (Rust, Price and O’Donovan 2003; Baker and Zuvella 2012). The activity of critically exploring exemplars is a future-oriented strategy correlating to the feedforward principle of providing prior exposure to and practice with assessment to develop richer notions of expectations, standards and quality and improve future task performance (Sadler 2010; Carless 2006). How to deliver these with meaningful interaction and student-centred discussion in the asynchronous online context is the challenge to which the researchers now turn.

The practices developed in the delivery of this course depended upon an investment in a framework which required a close review of practices at the end of each iteration. Discussions were held to determine what was most need to enhance student learning, and this in turn, led to designing further enhancements of practices, drawing upon the posts from the discussion board to indicate where instructions would be most useful. Often these were determined on the basis of a simple recognition of the same question being asked frequently (leading, for example, to the creation of a Frequently Asked Questions page) or on the observation of a range of similar posts that required specific instructions in order that students could complete the task. Having implemented these changes, close monitoring of the following iteration enabled evaluation of the results and further refinement of the interventions.

8. Conclusion

One of the key goals of this project was the further enhancement of task instruction to improve students’ experience of this unit. Through each Phase of the project described here, task instructions were expanded, edited and refined to provide maximum clarity for students and to ‘feedforward’ into their assessment preparation (Sadler 2010). By analysing students’ posts to the Discussion Board regarding this assignment, we have been able to ascertain that the

effect of these structural interventions has been to reduce the volume of lower-order queries, and stimulate higher-order queries. This research indicates that the provision of extensive task instruction - not only in the unit outline but also via weekly study materials and in pre-emptive and facilitation instructor prompts to the Discussion Board - can be an effective strategy to encourage higher-order thinking and facilitate greater interaction between learners in the community of practice.

This research appears to confirm the conclusions of other researchers examining provision of guidance in task instruction, such as Kirschner (2006), who find deficiencies in minimal instructions and advocate greater focus on learner guidance in assessment practice. Furthermore, the positive impact on instructor administration workload means that teacher interaction on asynchronous discussion forums can be designed to focus on generating greater learner-centred discussion and encourage higher order skills development. In other words, by providing greater task instruction in learning materials, the Discussion Board can function to provide more of what its name promises: discussion.

There were several interventions which developed as a result of close monitoring of the course iterations- changes were made to the specific instructions offered to students, clearer readings of the assessment criteria were made available and specific sites of instruction for particular issues (like the FAQ page) all contributed to both student satisfaction with the course, and a teaching framework which enabled staff to manage extremely large numbers while moderating approaches across a fairly large teaching team.

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Appendix:

