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## Changing assessment practices: The case for online moderation

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### Abstract

Online moderation meetings have the potential to support the collaborative professional development of teachers, and the formation of a common understanding of what denotes quality in student work in a standards based assessment system. In doing so systemic calls for consistency across education systems are also being met. In this paper a case for employing online moderation meetings is developed through recourse to the demands of learning in the twenty-first century and the place of assessment within those discourses. It is argued that empirical data is needed on the efficacy of online moderation meetings to guide future practice as the use of information and communication technologies increases in education systems. Online moderation is one way of gathering teachers across vast distances to share their understandings and develop common meanings of assessment.

While it is suggested that online moderation is one possible procedure to meet systemic requirements and support teachers' professional collaboration, the implementation of such a system also introduces new challenges for schools and teachers. Meeting online to discuss professional understandings is a new way of operating for teachers and involves technology that has not yet been fully utilised within education departments. Issues such as the types of interactions that are afforded within such an environment, as well as technical operating problems that occur when using technology impact on the employment of online meetings. Online moderation meetings while potentially solving the issue of developing common understandings across an entire department also pose new issues to be resolved.

There is a need for research into the efficacy of online moderation meetings so that future policy decisions may be based on sound empirical data. It is imperative that as new ways of knowing and acting are incorporated into school curriculum and pedagogy, assessment practices are also aligned. Online moderation meetings can support such practices by enabling teachers to communicate with a wider and more diverse group of teachers to establish common understandings.

This capacity of distributing knowledge, learning from what you do with this knowledge and fitting it back into the system in a self-expanding process, is really an essential feature of the New Economy (Castells, 2001, p. 152).

## Introduction

This paper addresses current educational issues involved with standards based assessment and consistency of teacher judgement. It is argued that online moderation meetings can support teachers in developing shared meanings of assessment practices and the quality of work that denotes a particular standard. To meet this goal the paper is divided into two main sections. The first section details current assessment practices that are responding to calls for education systems to prepare students with the skills necessary for life in the twenty-first century. Standards based assessment and authentic assessment are introduced as a means to support the progressive development of deeper knowledge and understanding, and the development of higher order thinking skills as well as to promote the transparency of the curriculum and assessment practices. Social moderation is presented as one way to address the criticisms associated with assessing within such a system. Online moderation meetings are being proposed as a way to meet systemic calls for consistency of teacher judgements and to facilitate the development of shared understandings of assessment practices amongst teachers.

The employment of online moderation meetings as a means of enabling teachers to discuss and negotiate their understandings of the standards across vast geographical areas is an underdeveloped and unexplored domain in mainstream education. To investigate research in this field has involved reading the literature focusing on the formation of online ‘communities’. The second section of this paper addresses the literature related to the formation of ‘community’ within online environments and the use of this term within such a context. Research that has been conducted into online interactions has identified several factors that may support or hinder teachers working in such an environment.

Online moderation meetings are one possible solution to developing greater consistency within education systems. However by introducing a new way of meeting, also introduces new issues focusing on the employment and incorporation of the technology, and the types of interactions that are afforded within such an environment. Research into the efficacy of online moderation meetings is necessary to support future policy making.

## The demands of a new economy and standards-based assessment

Twenty-first century discourses challenge education systems to question current practices so that education may be reshaped to meet the demands of future work and life. It is asserted that work in this new economy will involve creative and collaborative problem solving by transdisciplinary teams using advanced technologies and possessing deep knowledge and understanding within an area of expertise (Carew, 2003). There are currently many authors proclaiming that the development of these skills must be included as basic competencies in school programs (Carew, 2003; Gibbons & Nowotny, 2001; Morrow & Torres, 2000). For example, Gibbons and Nowotny (2001) argue for school curriculum to incorporate transdisciplinary knowledges that focus on addressing the ‘how’ questions, not only the ‘what’ and ‘why’ typically focused on in school curriculum. Carew (2003) includes problem

solving, communication skills and critical thinking, while Morrow and Torres (2000) identify creativity alongside team work. The incorporation of such skills into school curriculum requires that assessment practices (and pedagogy), as integral to the curriculum being delivered, are also aligned. It is essential that assessment practices can accurately capture evidence of the skills being claimed as necessary for the development of future workers and citizens.

Authentic assessment that focuses on the issues embedded in a community has the potential to address the types of skills stated as necessary for the twenty-first century. Authentic assessments can promote the capacity for life long learning by focusing on complex knowledge structures and their application to meaningful issues (Maxwell, 2002). Such assessment offers the possibility of richer, more sensitive and more comprehensive understanding of the depth of students' knowledge and skills, meeting demands for diversifying assessment and contributing to equity in education. However, the very characteristics that make authentic assessment effective (that is, the opportunities for students to demonstrate the depth and breadth of their understanding of a topic) can also compromise the reliability of the assessment (Broadfoot, 2007; Harlen, 1994). These systems are reliant on the construction, administration and judgement of student work by classroom teachers, while attributing professional respect for the teachers' ability to act as judges of their students' work (Cumming & Maxwell, 2004). Such a system needs to have processes in place to maximise the reliability and validity of teacher assessments and judgements as well as to ensure the quality of the assessment and meet systemic demands for accountability (Broadfoot & Black, 2004; Harlen, 1994, 2005; Wyatt-Smith & Bridges, 2006).

Standards based assessment systems have been introduced as a part of educational reforms in many countries as one way to address the needs of learning and working in the twenty-first century while also responding to systemic requirements for accountability (Centre for Educational Research and Innovation, 2005). Standards articulate the skills and knowledge that students should attain at a particular juncture in their education, and the quality of their performance of the skill or knowledge. It is claimed that standards provide a defensible framework for informing, substantiating and making judgements (Wyatt-Smith & Bridges, 2006, p. 11), and a mechanism for tracking student progress (Freebody, 2005; Sadler, 1987). However, studies have revealed diverse understandings of stated standards amongst teachers even with the provision of marking guidelines and exemplars (Harlen, 2005; Maxwell, 2002; Wyatt-Smith, 1999). Furthermore, Sadler (2008) has shown how standards may be interpreted differently by different teachers and students, and also by the same teacher on different occasions when marking in different contexts. Teachers and students bring to an assessment task a diverse range of historical, cultural and social experiences that may work together to produce different interpretations of the stated standards.

Research<sup>1</sup> (Fehring, 1998; Nonaka, 1991; Wyatt-Smith, 1999) has demonstrated that teachers draw on multiple sources of knowledge when forming judgements, and the use of standards and criteria alone does not produce consistency of teacher judgements. Fehring (1998) identifies seven major spheres of influence on teachers' judgements of students' literacy development. Nonaka (1991) refers to these knowledges as explicit and tacit knowledge and

<sup>1</sup> Bias in terms of general ability, special needs, linguistic ability or gender of students has also been reported (Bennett, Gottesman, Rock, & Cerullo, 1993; Harlen, 2004; Hoge & Butcher, 1984). However, much of this research has relied on cases of teacher estimation of student scores graphed against standardised test scores and compared with teacher ratings of student behaviour or gender; not when teachers have been judging against a set criteria or standard.

recommends that tacit knowledge is articulated through sharing experiences and understandings. Wyatt-Smith's (1999) study showed how teachers use social, cultural and contextual knowledge in forming judgements of students' work while assessing within the structure of published criteria and standards. For example, the teachers considered the effort put into a task as well as the impact of a grade on a student's motivation. These findings bring into question the capacity of stated standards to support the development of a common understanding of what denotes quality in student work and hence, the reliability of teacher judgement.

Assessment is not a simple matching that occurs between a work sample and standards of achievement. Assessment is a complex task that is grounded in the cultural and social experiences of those involved. When student results are reliant on a significant degree of teacher subjective judgements, it is little surprise that reliability and validity concerns exist, particularly when the assessment is considered to be high stakes (Harlen, 2005; Sadler, 1986). Wyatt-Smith (1999) questioned the legitimacy of decisions that are regarded as being based on stated criteria and standards when so many other factors have been identified that influence this decision. A possible way of reconciling this problem, given that 'local' factors cannot be separated from the assessment context (that is, we cannot separate the individual from the historical, social and cultural practices of which one is a part), is provided by Sadler (2008, p. 10) and his use of the term 'indeterminacy'. Sadler uses this term to refer to a situation where "a proposed solution system is incapable of producing, wholly within its own parameters, complete solutions for a given class of problems". To move beyond the issues involved in the reliability of teacher-based judgements requires that either new systems are developed or the problem must be considered from a different perspective (Sadler, 2008).

A possible reformulating of the problem involving the use of stated and 'personal' standards and the resultant lower reliability of teacher judgements is to include systems that purposefully recognise and encourage the explicit articulation and sharing of 'tacit' knowledge among teachers and with students. For example, as teachers discuss and reflect on the rationale for their judgement decisions, the processes of their decision-making may be made explicit. Education systems that support the inclusion of teacher judgement as a legitimate form of assessment practice have attempted to provide systems to overcome the difficulties that have been discussed. That teachers collaboratively justify and negotiate their understandings of what denotes quality in student work has been suggested as a way to expose teachers' tacit understandings and beliefs, or their "internalized reflective knowledge" (Fehring, 1998, p. 12). Importantly, it is the teachers' interpretation of the quality of the students' work, or put in another way, of the data that they have to work with, that needs to be shared amongst colleagues.

### Social moderation

Social moderation (hereafter interchanged with the term 'moderation') has been proposed as one solution to increase the reliability of teacher judgements of student work. Cumming and Maxwell (2004) state that in a system that relies on teacher professional judgement of student work, some form of supportive moderation process is a requirement. Social moderation is the process that connects the richness and authenticity of school-based assessment to increased dependability and comparability of the assessment results, providing a mechanism for quality control (Maxwell, 2006). Maxwell (2002, p. 1) defines moderation as "a process for developing consistency or comparability of assessment judgements across different assessors, programs and schools". Systems of moderation are necessary to ensure public confidence in

the fairness of an assessment regime, to guard against the errors and bias that may be evident in teachers' judgements, and to comply with standards as they are stated (Assessment Reform Group, 2005; Harlen, 2004). To reach consistency in judgement formation involves assessors developing a common understanding of the standards (New South Wales. Department of Education and Training, 2007) as well as "similar recognition of performances that demonstrate those standards" (Maxwell, 2001, p. 6). While collaboratively reviewing teacher judgements of students' work, it is anticipated that a common interpretation of the standards will result (James & Conner, 1992).

There currently exists little empirical evidence linking teachers' participation in social moderation processes with the development of common understandings of standards particularly across whole systems of education. In the past studies have mainly focused on small groups of teachers and localised practices (Davidson, 1999; Ingvarson, 1990; Malone, Long, & De Lucchi, 2004). In a current ARC funded project investigating standards-driven reform in assessment in the middle years of schooling, initial findings have suggested that involvement in local social moderation processes does impact positively on teachers' understandings of curriculum requirements and student achievement levels (Klenowski et al., 2007). However, these findings are at present tentative and do not yet extend across an entire education system.

For standards to have validity and reliability as an accountable assessment system there needs to be consistency amongst teachers' understanding of what counts as quality (Black & Wiliam, 2006). How this consistency may be developed across an entire education system remains to be investigated. The role of online social moderation meetings as a possible link between policy imposed standards and shared assessment practices and understandings needs to be explored.

### Investigating online moderation meetings

The focus in this section is on the type of communication that is afforded through information and communication technologies (ICT), and the possibility of developing shared assessment practices through this medium. While the use of ICT-mediated communication is increasing, problems have also emerged that focus on the operational<sup>2</sup> and social dimensions of this technology. Although originally considered to be an impoverished form of communication (Jones, 1998; Stoll, 1996), particularly with reference to text-based communications (for example, email, group discussion boards), recent research suggests a much more complex field of development (Hine, 2000). Communication through ICTs is now viewed as affording opportunities for effective and efficient collaboration, and the development of shared meaning in text based, voice and visual modes. However, the dislocation of space or place, and the impact of new forms of communication need investigation.

In this first section I provide examples of the types of concerns focussing on social interaction that research has identified with communicating in an online environment. Next, usage in this literature of the term 'online community' is discussed. This is a highly contested metaphor and the analysis leads to consideration of how the term 'community' may be applied within the context of online moderation meetings. Finally, some current examples of the application of ICTs to developing collaborative networks of teachers are presented.

<sup>2</sup> Operational issues relating to system compatibility and document sharing will be discussed in a later section of the paper with reference to the system adopted for the current research project.

## Contestations of online interactions

The capacity of information and communication technologies to provide an environment that is supportive of developing rich social interactions is highly contested. Social context cues apparent in face-to-face communication differ from those available in technological mediums of communication, in particular when visual images of participants are not included. In studies of computer mediated communication (Bordia, 1997; Jones, 1998; Stoll, 1996), which is primarily a textual form of communication, the effect of reduced social cues has led to the conclusion that this is an impoverished social environment, or at least one that lacks social etiquette. Furthermore, it has been reported that participants find it easier to show dissent in a virtual conversation than in face-to-face modes (Hiltz, Johnson, & Turoff, 1986). Kitchin (1998, p. 88) has argued that even within virtual communications where groups meet and share common protocols of interaction, a sense of responsibility that is an integral component of 'real' relationships is lacking. The impact of altered social cues is one avenue to investigate as teachers meet to moderate online.

In a comparative study (Andres, 2002) of work productivity between groups interacting in a face-to-face mode and those in virtual teams it was found that the social cues available in face-to-face communication supported greater work productivity than those collaborating in virtual teams. In addition, problems with the technology can inhibit usage of this form of communication and further compound the issues of altered social cues and lack of face-to-face support (Arnison & Miller, 2002; Hara & Kling, 2000). Andres (2002) suggested that managers of virtual teams need to be innovative in their approach to establishing supportive work teams. Extending from such a premise, Tanis and Postmes (2003) concluded that the provision of other social cues, for example, information of the on-line participants, can influence social relations to some degree but in a more complex manner than other studies have shown. This research suggests that wider sociocultural contexts impact on online interactions and investigations need to consider relationships within offline contexts as well as the online environment.

The issues involved in developing trust within virtual groups have been explored with regard to the formation of online communities and effective work teams (Larsen & McInerney, 2002). In this study, university students were involved in 'virtual organisations' to simulate real life inter-organisational work. The goal was for students to develop the higher order thinking and team work skills and abilities needed for work in real life virtual teams and organisations. The students, located in geographically diverse universities, were required to collaboratively complete a project. Aside from issues with the technology (lack of speed, technical problems, platform incompatibilities), trust presented as the common denominator linked to satisfaction or frustration with the activity. Adding a further perspective to such findings, Meyerson, Weick and Kramer (1996) have argued that a form of trust, called 'swift trust' can develop when temporary groups are formed which then functions to support the achievement of work goals. Such temporary groups are commonly organised with a specific goal or purpose that needs to be completed in a precise time frame. The authors suggest that the trust that develops within these groups and enables them to function effectively is primarily focussed on roles and tasks rather than personalities. This would mean that in ICT mediated moderation meetings, the teachers are able to collaborate and negotiate to reach shared understandings of a standard, not because they know and trust each other, but rather because they have a task to fulfil and they trust the professional status of their role as teachers. The concept of swift trust developed in online meetings is another element that may

support or inhibit the formation of common understandings of assessment which needs to be investigated.

To fully understand technology consideration must be given to the social context in which it exists (Castells, 1997). When the social and cultural contexts of those participating in ICT communications are taken into account, it becomes apparent that different perceptions of the place and value of the technology will exist. The technology is viewed as shaping, while being shaped by its users (Hine, 2000, p. 33) as new ways of doing and interacting evolve (Castells, 2001, p. 151). The advantages and disadvantages of the technology as perceived by different users will contribute to the shaping of the technology. How the technology develops or is used will depend on the problems that arise and the solutions that are adopted (Hine, 2000, p. 33). The actions of the users of the technology can transform how others view and use the technology (Castells, 2004).

### Contestations of online ‘communities’

The development of technological forms of communication has seen the introduction of new terminology but also the adoption and adaption of commonly (and some would say misused) terms. The use of the term ‘community’ is one such case as it is applied to virtual modes of communication. In this literature a ‘virtual community’ is considered a new form of social gathering that defies the historic limitations of space (Carter, 2005). Much of the criticism of the use of the terms ‘online community’ and ‘network’ focuses on the (mis)representation of ‘relationship’ that the terms evoke (Black-Hawkins, 2004; Doherty, 2004). Doherty (2004, p. 110) claims that the discourse of ‘online community’ has emerged in response to the panic that ‘real’ communities are being lost through the advent of computer technologies. Her argument focuses on the acceptance and thus legitimising of a metaphor of ‘community’ while not taking into account the implied meanings of the metaphor. By using the term ‘virtual community’ a discourse of community is accepted within a new discourse of ‘virtual’ which results in constraining our interpretations of what is happening. Doherty’s arguments suggest that either we reject the term ‘community’ within this context or that we must provide a clear ‘re-definition’ of ‘community’.

Castells (1997, p. 149) states that change in a Network society involves a “redefinition of cultural codes, proposing alternative meaning and changing the rules of the game”. New ways of operating can evoke new meanings and ways of defining what we do. Rheingold (2000, p. xxviii) has provided one view of ‘community’ that focuses on the social dimension and not the historical framing of the term that involves physical space. He has argued that a community can be identified as a group of people that “recognizes that there is something valuable that they can gain only by banding together”. It has been proposed that the broad elements that bind a community consist of social network capital, knowledge capital and communion (Rheingold, 2000; Smith & Kollock, 1998). Social network capital is the concept of extending a network of contacts that may in some way be supportive of one another’s needs. Knowledge capital is the belief that knowledge is built and developed through the community. And communion acknowledges the trust that support will be offered and provided through the community. This broad understanding of community as configured through social relations, distances the belief that communities need to be geographically defined and opens the way for a possible conception of ‘virtual communities’.

Redefining the accepted meaning of ‘community’ however, does not alleviate all concerns. Hine (2000, p. 27) believes that the “focus on community formation and identity” with regard

to Internet communications has caused “internet spaces” to be seen as “self-contained cultures”. The view of the internet as a culture of its own is challenged by Hine (2000) claiming that this perception fails to take into account the influence of offline cultural and social contexts. Hine (2000, p. 144) states, “The offline world is rendered as present within the online spaces of interaction”. When teachers meet in online meeting centres, the online and offline ‘worlds’ of the participants merge as they discuss their student’s work with other teachers physically located in other places. The online meeting results in a complex conglomeration of school microcultures, intersecting through the common aim of communicating about judgements of the quality of student work. This virtual gathering may generate new ways of interacting. However, whether claims can be made of a developing ‘assessment community’, or whether there are more appropriate terms to describe this form of interaction and its effects beyond the virtual meeting, requires further investigation.

The arguments as presented by Rheingold (2000), Hine (2000), Castells (2004) and Doherty (2004) regarding the perception of an online ‘community’ require a clarification of how the term may be used. Online moderation meetings involve a gathering of teachers who are involved in judging student work according to the same set of stated standards. The shared experiences of these teachers are grounded in their work with the standards and their assessment practices using a common assessment task. It is anticipated that over time the teachers will develop common understandings of the quality of work required to meet a stated standard, which may be termed an assessment ‘community of practice’ (Lave & Wenger, 1991). Such a ‘community of practice’ could not be fixed in time or space. Participants will come and go. At times, such a grouping will have depth of experience and appear stable; while at other times it will be overbalanced by ‘apprentices’ and perhaps in a state of flux. The meeting of teachers through information and communication technologies is one aspect of developing shared understandings of assessment amongst teachers. ‘Community’ in this context is used very lightly, in the sense of a group that has a common binding element (Rheingold, 2000). In this paper that binding element is considered to be the development of common understandings of stated standards to establish consistency across all schools in an education system.

### Forming collaborative networks of teachers

In education there have been reports of some attempts to connect teachers through online groups, though these situations when prolonged have usually involved text based and asynchronous modes of communication. For example, O’Brien et al (2006) discuss the movement in the UK to develop collaborative school networks in an effort to improve teaching and learning. ICT is promoted as a means of offering flexibility for collaboration. These authors have borrowed from organisational theory to describe the conditions that facilitate the formation of such networks, for example, the presence of trust, respect, reciprocity, openness, shared benefits, active participation, ‘creative tension’, and purpose which may occur over time and with reflection (O’Brien et al., 2006, pp. 404, 407). In another study (Dalgarno & Colgan, 2007) the development of an asynchronous, on-line mathematics community established to provide professional development for elementary school mathematics teachers is reported. This research has suggested that teachers benefit from online professional development that involves a facilitator who is in regular contact with the group, and opportunities to pose queries, discuss, share and apply new ideas. Both of these studies are concerned with the flexibility that is afforded through online environments to enable teachers to meet with the goal of supporting their professional development. The studies also highlight the developing interests within education systems of using ICTs to

support the collaboration of teachers on a professional level. It is proposed in this paper that online moderation meetings may also provide teachers with the flexibility to meet in a different mode and with a more diverse group of teachers across a broad area, particularly for those teachers in remote areas.

Castells (2001, p. 151) has stated that “new ways to generate knowledge” and then to usefully apply this knowledge need to be found if organisations are to continue to be innovative in a knowledge society. Education systems would be wise to heed these words. Information and communication technologies are developing that will assist education systems to more effectively generate and share knowledge. Networking within and across organisations is a necessary part of sharing information to produce a bigger and better organisation than the collective parts alone. An organisation that embraces innovative practices and the synergy of collaborative enterprises will be in the best position to evolve within a new economy (Castells, 2001, p. 158, 159). In the past years education systems have dallied in these forms of communication, and even though momentum in their use is gaining pace, they have not ventured far enough to make productive use of the available technologies.

### Research case study

One research project that is currently being conducted to investigate some of these issues is an ARC Linkage project investigating standards-based assessment in the middle years of schooling, and an associated doctoral research. The doctoral research will specifically focus on the development of a shared understanding of assessment when teachers meet in online moderation meetings, and the translation of the conversations that occur in the meeting to their teaching practices. It is proposed that the doctoral research will develop in the following manner. The study will access the broad range of data gathered from the teachers involved in online meetings conducted during 2007 and 2008 as part of the ARC project. Teachers will moderate and collaborate online in the project through the WebEx<sup>©</sup> meeting centre. This web conferencing system affords synchronous interactions of teachers and secure, interactive document sharing. Multiple operating systems are supported within the WebEx<sup>©</sup> infrastructure (THINKstrategies, 2006). To participate in the session teachers need to have access to a phone that is preferably hands-free for ease of use and which is close by their computer.

The PhD analysis will focus on one of the online meetings and the three or four teachers involved in this meeting. The collected data will consist of the meeting transcript and ‘observation’ of the online meeting; an interview with each of the focus teachers involved in this meeting regarding the meanings they have taken from incidents and interactions that occurred in the meeting; and observations of the teachers as they work within a standards-based assessment system. At this level the focus is on the teachers’ perceptions of the value of the online moderation meeting to support their teaching practice, that is, their translation of the meeting discussion to their classroom practices.

The study will parallel the implementation of the Queensland Curriculum, Assessment and Reporting (QCAR) framework which is supporting the alignment of curriculum, assessment and reporting within the middle years of schooling. One aspect of this support is the provision of a common assessment task (QCAT) focussed on performance-based assessment that students in Years 4, 6 and 9 complete in the key learning areas of English, Mathematics and Science. The focus online moderation meeting will be selected from the October/November, 2008 group of online moderation meetings of the QCATs. Contact with the teachers will be

made again during the first term of 2009 as the teachers start to work with a standards based assessment system. Observations of the teachers, particularly during the implementation phase of a unit of work, and during judgement making will occur. Interviews with the teachers will involve investigating the links that the teachers have made between their teaching practices and their understandings taken from the 2008 moderation meeting. In particular, the interviews will focus on their developing understanding of the standards, and how this has informed their classroom practice, pedagogy and assessment. The analysis will focus on the impact of the conversation and their interactions at the meeting, and how this then translates into their intended classroom practice. It is not an in-depth analysis of classroom practice as this will be another study in its own right. To emphasise, in the PhD study the focus is on the connections that teachers are making and taking from the online moderation meetings that may inform their teaching practices, that is the initial stages of teachers developing an identity as an assessor who works within a standards framework.

The study will view this data through a sociocultural lens which perceives learning as occurring through interactions and influenced by factors such as social and cultural context, available resources, and history. Learning occurs as meanings are negotiated. Identities develop as resources or opportunities are either made available or restricted (Murphy & Hall, 2008). The focus of this study is on the translation of policy between prescription, perception and enactment, and the development of an ‘assessment’ identity through the practice of participation in online moderation meetings.

## Conclusion

This paper has provided a broad overview of present international trends in assessment as it relates to the reliability and validity of teacher judgements of student work in a standards-based assessment system. It has also introduced a discussion of how ICTs may support (or impede) the communication and development of shared understandings of assessment concepts between geographically diverse groups of teachers. The purpose of the paper has been to establish the urgency for research into online moderation meetings as a means of supporting teachers’ development as competent assessors in a standards based assessment system who share common understandings of what denotes quality in student work; as well as addressing systemic concerns for accountability.

Literature on the requirements of a worker in the twenty-first century has resulted in questions being asked of the capability of many forms of assessment to adequately test for the skills deemed to be important. The necessity for systems of moderation has been established through this requirement that assessment is representative of contemporary and future societal needs. Such a system requires authentic forms of assessment that probe areas like problem solving and higher order thinking skills. This form of assessment usually involves subjective decisions on the quality of student response which decreases the reliability of such a test instrument. The complexity of forming judgements on the quality of student work in standards-based assessment systems has been identified, in particular the number of factors that are involved in such a decision beyond the use of the stated standards. Moderation practices have been presented as one way to increase the reliability of assessments by providing an environment where teachers may work towards articulating their understandings and beliefs. Online moderation meetings have been promoted as one way to develop consistency of judgements amongst a large and diversely situated group of teachers.



Online moderation meetings while providing a possible solution for assessment in the twenty-first century, also present a new set of issues to be resolved. ICT-mediated moderation is an unexplored domain for teachers to meet and discuss their understanding of what denotes quality in student work. The paper has identified a number of issues that are worthy of greater investigation if progress is to be made in this field. To understand such an environment, needs recourse to the social, cultural, historical and political discourses that may influence the formation of this new mode of conducting moderation. The proposed research project presented in this paper will contribute to the discussions currently occurring internationally in education that focus on the role of assessment to improve teaching/learning practices.

## References

- Andres, H. P. (2002). A comparison of face-to face and virtual software development teams. *Team Performance Management: An International Journal*, 8(1/2), 39-48.
- Arnison, L., & Miller, P. (2002). Virtual teams: A virtue for the conventional team. *Journal of Workplace Learning*, 14(4), 166-173.
- Assessment Reform Group. (2005). Assessment systems for the future: working paper 1: Aims and outcomes of the first year's work of the project. Retrieved 04/02/2008, from <http://arg.educ.cam.ac.uk/images/ASF%20Working%20Paper%201%20Draft%2010.pdf>
- Bennett, R. E., Gottesman, R. L., Rock, D. A., & Cerullo, F. (1993). Influence of behaviour perceptions and gender on teachers' judgements of students' academic skill. *Journal of Educational Psychology*, 85, 347 – 356.
- Black-Hawkins, K. (2004). Developing and sustaining school-based practitioner research, enquiry and evidence within networks. In C. McLaughlin, K. Black-Hawkins & D. McIntyre (Eds.), *Researching teachers, researching schools, researching networks: A summary of the literature*. Cambridge, UK: University of Cambridge, Faculty of Education.
- Black, P., & Wiliam, D. (2006). The reliability of assessments. In J. Gardner (Ed.), *Assessment and learning*. London, UK: Sage publications.
- Bordia, P. (1997). Face-to-face versus computer-mediated communication: A synthesis of the experimental literature. *The Journal of Business Communication*, 34(1), 99-120.
- Broadfoot, P. (2007). *An introduction to assessment*. New York, USA: Continuum International Publishing Group.
- Broadfoot, P., & Black, P. (2004). Redefining assessment? The first ten years of Assessment in Education. *Assessment in Education*, 11(1), 8-27.
- Carew, D. (2003). Educating the 21st century citizen. Retrieved 27/04/08, from [http://download.microsoft.com/download/b/7/3/b7357b74-014a-42bb-9511-61ac08d4e408/EducatingThe21stCenturyCitizen\\_Whitepaper.doc](http://download.microsoft.com/download/b/7/3/b7357b74-014a-42bb-9511-61ac08d4e408/EducatingThe21stCenturyCitizen_Whitepaper.doc)
- Carter, D. (2005). Living in virtual communities: An ethnography of human relationships in cyberspace. *Information, Communication & Society*, 8(2), 148-167.
- Castells, M. (1997). An introduction to the information age. *City*, 2(7), 6-16.
- Castells, M. (2001). The information city, the new economy, and the network society. In F. Webster (Ed.), *The information society reader (2004)*. London, UK: Routledge.
- Castells, M. (2004). Informationalism, networks, and the network society: A theoretical blueprint. In M. Castells (Ed.), *The network society: A cross-cultural perspective*. Northampton, UK: Edward Elgar Publishing Limited.
- Centre for Educational Research and Innovation. (2005). *Formative assessment: Improving learning in secondary classrooms*. Paris, France: Organisation for Economic Co-operation and Development.
- Cumming, J. J., & Maxwell, G. (2004). Assessment in Australian schools: Current practice and trends. *Assessment in Education*, 11(1), 89-108.
- Dalgarno, N., & Colgan, L. (2007). Supporting novice elementary mathematics teachers' induction in professional communities and providing innovative forms of pedagogical content knowledge development through information and communication technology. *Teaching and Teacher Education*, 23, 1051-1065.
- Davidson, J. (1999). All things in moderation: A whole school approach to authentic assessment. In H. Fehring (Ed.), *Literacy assessment: A collection of articles from the Australian Literacy Educators' Association* (pp. 81-84). Newark, USA: International Reading Association.

- Doherty, C. (2004). Promising virtues in the virtual classroom: Metaphors on trial. In E. McWilliam, S. Danby & J. Knight (Eds.), *Performing educational research: Theories, methods and practices*. Flaxton, Australia: Post Pressed.
- Fehring, H. (1998). *Understanding the influences of teachers' judgements in the process of assessing and reporting students' literacy in the classroom*. Paper presented at the Literacy for All: Joint National Conference Australian Literacy Educators' Association & Australian Association for the Teaching of English, July 5 - 7, 1998, Canberra, Australia.
- Freebody, P. (2005). *Background, rationale and specification: Queensland Curriculum, Assessment and Reporting Framework*. Queensland, Australia: Queensland Government, Department of Education and the Arts.
- Gibbons, M., & Nowotny, H. (2001). The potential of transdisciplinarity. In J. T. Klein, W. Grossenbacher-Mansuy, R. Haberli, A. Bill, R. W. Scholz & M. Welti (Eds.), *Transdisciplinarity: Joint problem solving among science, technology, and society. An effective managing complexity*. Basel, Switzerland: Birkhauser Verlag.
- Hara, N., & Kling, R. (2000). Students' distress with a web-based distance education course. An ethnographic study of participants' experiences. *Information, Communication and Society*, 3(4), 557 – 579.
- Harlen, W. (1994). *Concepts of quality in student assessment*. Paper presented at the Annual meeting of the American Educational Research Association.
- Harlen, W. (2004). *A systematic review of the evidence of reliability and validity of assessment by teachers used for summative purposes*. London, UK: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- Harlen, W. (2005). Trusting teachers' judgement: Research evidence of the reliability and validity of teachers' assessment used for summative purposes. *Research Papers in Education*, 20(3), 245-270.
- Hiltz, S. R., Johnson, K., & Turoff, M. (1986). Experiments in group decision making communication process and outcome in face-to-face versus computerized conferences. *Human Communication Research*, 13(2), 225-252.
- Hine, C. (2000). *Virtual ethnography*. London, UK: Sage Publications.
- Hoge, R. D., & Butcher, R. (1984). Analysis of teacher judgements of pupil achievement levels. *Journal of Educational Psychology*, 76(5), 777-781.
- Ingvarson, L. (1990). *Enhancing professional skill and accountability in the assessment of student learning*. Paper presented at the Annual Meeting of the American Educational Research Association, April 16-20, 1990, Boston, USA.
- James, M., & Conner, C. (1992). *Moderation at Key Stage One across four LEAs 1992*. Cambridge, UK: Cambridge Institute of Education.
- Jones, S. G. (Ed.). (1998). *CyberSociety 2.0 : revisiting computer-mediated communication and community*. Thousand Oaks, USA: Sage Publications.
- Kitchin, R. (1998). *Cyberspace: The world in wires*. Chichester, UK: John Wiley & Sons.
- Klenowski, V., Adie, L., Gunn, S., Looney, A., Elwood, J., Wyatt-Smith, C., et al. (2007). *Moderation as judgement practice: Reconciling system level accountability and local level practice*. Paper presented at the Australian Association for Research in Education Conference, November 25-29, 2007, Fremantle, Australia.
- Larsen, K. R. T., & McInerney, C. R. (2002). Preparing to work in the virtual organization. *Information & Management*, 39, 445-456.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Malone, L., Long, K., & De Lucchi, L. (2004). All things in moderation. *Science and Children*, 41(5), 30-34.

- Maxwell, G. (2001). *Moderation of assessments in vocational educational education and training*. Brisbane, Australia: Queensland Government. Department of Employment and Training.
- Maxwell, G. (2002). *Moderation of teacher judgements in student assessment: Discussion paper on assessment and reporting*. Brisbane, Australia: Queensland School Curriculum Council.
- Maxwell, G. (2006). *Quality management of school-based assessments: Moderation of teacher judgements*. Paper presented at the 32nd International Association for Educational Assessment Conference, May 21 -26, 2006, Singapore.
- Meyerson, D., Weick, K. E., & Kramer, R. M. (1996). Swift trust and temporary groups. In R. M. Kramer & T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research* (pp. 166-195). California, USA: Sage Publications.
- Morrow, R. A., & Torres, C. A. (2000). The state, globalization and educational policy. In N. C. Burbules & C. A. Torres (Eds.), *Globalization and education: Critical perspectives*. New York, USA: Routledge.
- Murphy, P., & Hall, K. (Eds.). (2008). *Learning and practice: Agency and identities*. Open University, Milton Keynes: Sage.
- New South Wales. Department of Education and Training. (2007). Consistent teacher judgements in action: A resource for schools. Retrieved 28/11/2007, from [http://www.curriculumsupport.education.nsw.gov.au/consistent\\_teacher/index.htm](http://www.curriculumsupport.education.nsw.gov.au/consistent_teacher/index.htm)
- Nonaka, I. (1991). The knowledge-creating company. *Harvard Business Review, November-December*, 96-104.
- O'Brien, M., Burton, D., Campbell, A., Qualter, A., & Varga-Atkins, T. (2006). Learning networks for schools: Keeping up with the times or a leap into the unknown? *The Curriculum Journal, 17*(4), 397-411.
- Rheingold, H. (2000). *The virtual community : Homesteading on the electronic frontier*. Cambridge, USA: MIT Press.
- Sadler, D. R. (1986). *Subjectivity, objectivity, and teachers' qualitative judgements*. Queensland, Australia: Board of Secondary School Studies.
- Sadler, D. R. (1987). Specifying and promulgating achievement standards. *Oxford Review of Education, 13*(2), 191 – 209.
- Sadler, D. R. (2008). Indeterminacy in the use of preset criteria for assessment and grading [Electronic Version]. *Assessment and Evaluation in Higher Education*. Retrieved 2 May, 2008 from <http://dx.doi.org/10.1080/02602930801956059>.
- Smith, M., & Kollock, P. (Eds.). (1998). *Communities in cyberspace*. New York, USA: Routledge.
- Stoll, C. (1996). *Silicon snake oil: Second thoughts on the information highway*. London, UK: Pan.
- Tanis, M., & Postmes, T. (2003). Social cues and impression formation in CMC. *Journal of Communication, Dec*, 676-693.
- THINKstrategies. (2006). A whitepaper for leading SaaS providers: Delivering better collaboration solutions via the WebEx connect ecosystem [Electronic Version]. Retrieved 22 September, 2008 from <http://www.webex.com.au/smb/overview/whitepapers.html>.
- Wyatt-Smith, C. M. (1999). Reading for assessment: How teachers ascribe meaning and value to student writing. *Assessment in Education, 6*(2), 195-223.
- Wyatt-Smith, C. M., & Bridges, S. (2006). *Assessment for learning: An Australian study in middle schooling*. Paper presented at the International Association for Educational Assessment Conference, May 21-26, 2006, Singapore.