

# Action Research

ACTION RESEARCH: REFLECTIVE PRACTICE AND PROFESSIONAL DEVELOPMENT'



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# 2008

**Online Discussion Forum (ODF) – a tool for  
supporting student learning and personal  
development**

**David Grant**

## INTRODUCTION

*'The adoption of social software tools, techniques and ideas will be the most important and visible example of the use of emerging technology in education over the next few years' (Bryant, 2007).*

This quote from Lee Bryant (Bryant, 2007) highlights a sea change that is taking place in the use of Computers and the Internet. Although not by any means the exclusive preserve of teenagers and “twenty-somethings”, the use of **social networking** sites such as *Facebook*, *Bebo*, *Myspace* and *MSN* is almost ubiquitous within these age groups. Peer group pressure means that young people may favour one over another; with *Bebo* being more popular with younger teenagers and *Facebook* being more popular with students and young adults. However it is common for people to be using a number of these sites with overlapping circles of friends simultaneously and, in some cases, having multiple conversation threads with the same individual coexisting in the different domains. (Rosen, 2007) This capacity for multi-tasking often raises scepticism in the eyes of parents and teachers who would wish to ban the use of this software whilst their young people are supposed to be engaged with their studies. However there is a danger of throwing the baby out with the bath water and missing an opportunity to engage students by using online technology to stimulate educational debate<sup>1</sup>. (Jones, 2008)

The Online Discussion Forum (ODF) is not a new phenomenon; in fact one of the earliest uses of the Internet was through Bulletin Boards and BBS software. However this tended to be the domain of more technically literate individuals. In the early 1990's Peter Milford set up discussion forum for use by Physics students at St Vincent College, Gosport. This ran across the college network but had virtually zero take up. There may be many reasons for this but I believe the limitation to use within the college network and a lack of a culture of engaging with peers electronically doomed the initiative at that time.

Today's College student has 24 hour access to the internet and sees electronic communication as a natural extension of their normal life. In a recent survey conducted in a Perspectives on Science<sup>2</sup> lesson 33% of students saw a mobile phone as “essential” to their identity! It seems that the time is ripe for making use of these technologies to extend learning beyond the confines of the classroom walls. The options are endless,

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<sup>1</sup> This was the subject of a recent documentary on Teachers TV called “School Matters - Online Social Networks - Friend or Foe?” can be viewed online at <http://www.teachers.tv/video/24687>

<sup>2</sup> Perspectives on Science - PoS (aka The History, Philosophy and Ethics of Science) From September 2008 this Edexcel AS level specification will be assessed as an Extended Project. The scheme of Assessment remains largely unchanged and consists of a 6000 word report (80%) and a 10 minute presentation (20%).

ranging from the social networking sites already mentioned, through free online forum such as

[www.ipforum.com](http://www.ipforum.com) and [www.freeforums.org](http://www.freeforums.org)<sup>3</sup>.

Edexcel : Qualifications    Perspectives on Science - Index

**Perspectives**

Forum Index Profile Private Messages FAQ Memberlist Search Usergroups Logout

You have no new messages  
 You last visited on Fri Feb 29, 2008 1:02 pm  
 The time now is Mon Mar 03, 2008 4:58 pm  
 All times are GMT + 1 Hour  
[Perspectives on Science Forum Index](#)

[View posts since last visit](#)  
[View your posts](#)  
[Show own topics](#)  
[View unanswered posts](#)  
[Mark all forums read](#)

**General**

**Classwork**

Forum	Topics	Posts	Last Post
<a href="#">Philosophy of Science</a> This forum is for debating further ideas about the Philosophy of Science raised in lessons	24	431	Mon Feb 26, 2007 1:41 pm <a href="#">Tom the toadstool</a> →
<a href="#">History of Science</a> This forum is for debating further ideas about the History of Science raised in lessons	2	1	Thu Oct 19, 2006 9:50 pm <a href="#">David Grant</a> →
<a href="#">Ethics of Science</a> This forum is for debating further ideas about the Ethics of Science raised in lessons	9	107	Thu Feb 01, 2007 1:16 pm <a href="#">atif.muhammad</a> →

**Media Watch**

**Who is Online**

Our users have posted a total of **946** articles  
 We have **52** registered users  
 The newest registered user is [Tom the toadstool](#) [John Doe](#) [Lara Ward](#) [Gordon Higgs](#) [Sarah Crabtree](#)

In total there are **2** users online :: 1 Registered, 0 Hidden and 1 Guest [ [Administrator](#) ] [ [Moderator](#) ]  
 Most users ever online was **13** on Fri Nov 17, 2006 10:36 am  
 Registered Users: [David Grant](#)  
 This data is based on users active over the past five minutes

New posts    No new posts    Forum is locked

[Go to Administration Panel](#)

Figure 1 - Perspectives on Science Forum (<http://perspectives.ipforum.com/>)

The first ODF that I set up was hosted on iPhorum<sup>4</sup> and was for approx 50 second year students across 3 AS Perspectives on Science classes. This course requires students to engage with the Social and Ethical implications of scientific activity. During the taught phase of this course students develop their research and critical analysis skills as they look at documents from a historical perspective and start thinking about ethical and philosophical issues. The course is supported in College through PoSWEB which can be found on SixthNet (the College Intranet). In order to encourage students to carry out their independent research and share their findings with other students a “Media Watch” page was included in the site. Students would e-

<sup>3</sup> My initial work in this area involved setting up a Perspectives Forum and UniversityWatch forum using these two hosts. They offer a high degree of flexibility and sophistication but at the expense of user friendliness from the administrator’s point of view. In the case of iPhorum it also involves exposing students to advertising over which there is no control and may not always be suitable, especially for a younger audience. FreeForums guarantees to be free from advertising and certainly has potential for further use.

<sup>4</sup> <http://perspectives.ipforum.com/>

mail me details of news stories and other documents they had found relevant to their particular area of interest. This quickly became onerous and cumbersome to update and a solution was needed that enabled students to upload the information themselves. I discussed this with colleagues in the Learning Resource Centre and realised that the functionality I required could be achieved using iPhorum.

It quickly became apparent that the iPhorum had a far greater potential and other discussion threads were created that students were encouraged to post as part of or as an extension to lesson time activities. Over a six month period the students and staff involved in the forum contributed over 940 posts – an average of almost 20 posts per individual on a wide range of topics. Of these 10 students contributed above the average with two students exceeding 100 posts each!

The discussions that operated on the Perspectives forum consisted of a mixture of threads initiated by staff related directly to class work and those initiated by students. The thread that generated the most interest was one that grew out of a comment from a student:

<p>M:</p> <p>If we believe Darwin then we are basically believing that us humans are here today due to a series of random events that have happened at a molecular level throughout the ages. Hardly sounds reasonable to me.</p> <p>Let's just sort this matter out once and for all and say that GOD did it. Job done!</p> <p>Staff:</p> <p>The gauntlet has been thrown down. Who will line up and defend M? Anyone able to refute his claims?</p>
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This thread alone generated 149 posts. As would be expected some of these were at the level of “sound-bites” however it was exciting to see how students were able to develop quite sophisticated arguments and to respond to others, arguing in a statement by statement mode. With a group consisting of individuals professing Islam, Sikhism, and Atheism along with various flavours of Christianity there was wide ranging debate and evidence of genuine curiosity in the beliefs of others. One dyslexic student in particular “discovered his voice” in this thread and changed from being a shy and retiring member of the class to a

more active participant in class discussion. Despite his difficulties he felt comfortable contributing to the online debate and even reprimanded students who criticised his spelling and grammatical errors. This dialogue had the unexpected benefit of improving his oral class participation, acceptance and respect from the rest of the group and his overall engagement with the subject.

This year I have chosen to use the discussion facility within TurnitinUK<sup>5</sup> as this is a tool whose use is being encouraged at The Sixth Form College Farnborough in order to help students understand the issue of plagiarism. Recently a workshop was attended by 6 members of teaching staff to learn how to set up and participate in an ODF using TurnitinUK. Apart from the immediate benefit gained from developing confidence in using another tool in the educational toolkit feedback from the experiences gained by these colleagues has contributed data to this Action Research Project.

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<sup>5</sup> [www.submit.ac.uk](http://www.submit.ac.uk) The forum facility within TurnitinUK lacks some of the more advanced features available in some of the tools mentioned earlier in this article. For example FreeForums provide the ability to customise the overall appearance of the forum, include images in the postings, categorise the threads into different topics and for users to customise their own profile including an Avatar image of themselves. The benefit of using the TurnitinUK forum facility lies in the ease of administration and more than compensates for the largely cosmetic loss of functionality.

## METHODS USED

There have been three different approaches in the use of ODF in College this year. Two of these forums have supported work in curriculum areas; the third was a college-wide forum to support final year students as they researched their University applications:

1. **Perspectives Forum** – This ODF is the one mentioned in the introduction. The forum has now been used successfully with two cohorts of Perspectives on Science (PoS) students in a total of 5 teaching groups. 3 groups used the ODF hosted on the iPhorum platform, whilst the remaining 2 groups used the ODF facility within TurnitinUK – the JISC plagiarism detection software.

The aim of this forum was to encourage students to discuss the concepts being introduced during lessons. In particular to discuss their understanding to key Philosophical and Ethical Frameworks and to apply these to classic questions such as “When does life begin?”, “When does life end?”, “Did God create the Universe?”

Data was collected early in the course piggy backing on a survey conducted by researchers from the Institute of Education (London). The aim of their investigation was to research the attitudes of students towards discussion work in the Perspectives on Science course. As this research was conducted before the students had been exposed to ODF it was timely and relevant to my own work and they kindly agreed to me keeping a copy of the completed questionnaires. The full responses can be found in Appendix 1

Towards the end of the year I used an online questionnaire using the Quia<sup>6</sup> platform to survey a random sample of students across the whole College on their usage of computers with a particular focus on Social Networking Software. All the PoS students’ responses were identifiable in the survey and could be extracted to provide a comparison with the others which acted as a control group. The questionnaire used a variety of multiple choice and free response questions and is included in Appendix 2.

2. **Psychology Forum** – This ODF was set up by a teacher in the Psychology Department. Students were required to complete an assessed assignment on “Individual Differences” in small groups of 3/4. All students to be awarded the same grade so cooperation and team work essential. The ODF was used as a means for students to communicate and cooperate in

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<sup>6</sup> Quia (pronounced key-ah) provides a wide variety of tools, including online multiple choice quizzes and surveys for gathering student and teacher feedback. The College has a subscription and more information is available at [www.quia.com/findout.html](http://www.quia.com/findout.html)

completing the task with the teacher able to view and monitor this process. The assignment was launched using a 40 min session at the computers otherwise the use of the forum took place outside lessons over a two week period. I was unable to collect data from the students before the students embarked on this project. However, following the completion of the exercise I was able to interview the teacher who ran the ODF and a summary of this interview is included in Appendix 3.

In common with the PoS students these students were also included in the Online survey and their responses could be extracted to provide a comparison with random control sample.

- 3. UniversityWatch** – This ODF was set up in June 2007 to provide students with a centralised resource where they could post comments and share information about the Universities and courses they were interested in applying to. Students are introduced to UCAS and the application procedure in tutorials during the summer term. A key part of this programme is to encourage careful research over the courses and institution they wish to apply to. UniversityWatch was conceived as a way for students to share information and ask questions about the Universities and Courses that interested them.

To kick start the ODF staff at the College were asked to post information about their own University experience. All students progressing into their A2 year were sent an individualised e-mail inviting them to join the forum with full details on how to register. This was reinforced by Personal Tutors during the Tutorial Programme along with reminders on the Student Intranet pages. A second wave of invitations was given on their return to College in September 2007.

During the autumn term 2007, which is the main period during which students make their applications, several reminders were sent out to encourage students to share information. In particular they were asked to comment upon any Open Day or Interviews they attended.

Questions about UniversityWatch were included as part of the online survey mentioned previously and these results are included in Appendix 2.

## FINDINGS

The Institute of Education survey provides evidence that the Perspectives on Science students are highly motivated and engaged with the course. One student even stated “*I think that this is the best course I have ever done!*” 90% of the cohort plan to go to University in the next three years. Not surprisingly, given the nature of the course, 18 of these students hope to study a course that has either a medical/nursing focus or is scientific in content. The single exception plans to study Politics and International Relations. 4 students plan to study Psychology. A similar pattern emerges in their career aspirations which almost directly arise out of their degree subject choices.

In response to the question ‘Why did you choose the *Perspectives on Science* course?’ The common features are a good fit with their current course allied to an interest in ethics and science. Several students expressed pleasure at the opportunity to choose their dissertation topic.

The overwhelming response to the question ‘What have you liked about the course so far?’ is the opportunity for discussion and debate. A similar response was elicited by the question ‘What would help you to enjoy the course more as it progresses?’ with over half stating *more discussions and debate*. This is significant in the context of my action research project because it indicates a high degree of engagement with discussions – a promising sign for online discussion forum.

95% agreed or strongly agreed with the statement that the course provides lots of opportunity for discussion and 50% agreed or strongly agreed that these discussions had challenged their own ideas.

Including Perspectives and Psychology Students 269 students completed the Student Computer Habits survey. 68% of respondents were female and 32% were male. Over 50% of students said they had exclusive use of a computer at home which they used for their main computer activity. Only one student said they did not have internet access at home.

In response to the question about which Social Networking sites students were aware of over 95% said they knew of Bebo, MySpace and Facebook rising to 99% for MSN (Messenger). When it comes to usage 38% included Bebo in their top 4 sites, 47% placed MySpace in their top 4, 70% placed Facebook in their top 4 and 75% placed MSN (Messenger) in their top 4.

Of the 269 respondents over 96% said that they had experienced discussions as part of their normal classroom experience. 12% (33 students) had participated in ODF discussion at the instigation of their teacher of these 15 were identifiably from the Perspectives students.

Those students who had used ODF expressed the following opinions:

Statement	Agree or Strongly Agree	No preference	Disagree or Strongly Disagree	Total
I enjoyed using the forum	47% (16)	23% (8)	29% (10)	100% (34)
I felt able to express my opinions better than in class discussions	40% (14)	25% (9)	34% (12)	100% (35)
I contributed more than I would in class discussions	34% (12)	25% (9)	40% (14)	100% (35)
I "listened" to the views of others more than I would in class discussion	27% (10)	33% (12)	38% (14)	100% (36)
I took more care to develop my own ideas than I would in class discussion	44% (16)	22% (8)	33% (12)	100% (36)
I developed a better understanding of the topic	33% (12)	33% (12)	33% (12)	100% (36)
I would recommend online forum to other teachers	41% (16)	33% (13)	25% (10)	100% (39)
I found it easy to use the forum	64% (24)	29% (11)	5% (2)	100% (37)

These figures largely speak of a warm reaction to the use of ODF in lessons. Students clearly enjoyed the experience (47%) and found the forum easy to use (64%), I believe this is because it taps into their familiarity with Social Networking software and the similarities between the way online communities and ODF operate.

It is also encouraging that 40% felt better able to express their opinions than in class discussions; 44% felt they took more care to develop their own ideas than would be the case in class discussion and 41% would recommend ODF to their other teachers. This latter statistic seems to have tapped into a latent desire to use ODF in classes as more students expressed an opinion on this than claimed to have actually experienced the technology in College.

Student's free responses also support the view that ODF are beneficial.

*'Very valuable as it gives you the opportunity to discuss and use others opinions in your own research.'*

*'I found it useful and easy to express my opinions and views.'*

*'Found it easier to be more honest with my opinions, but entrances (posts?) should be kept anonymous'*

*'Good way to discuss the topic of abortion as everyone could put their opinion in at any time and did not have to wait for someone to finish speaking.'*

*'In a way it was better than a spoken discussion because you could go back and check what other people had said, you didn't forget the different sides of the argument (especially useful for asking specific questions about your project).'*

*'Very easy to use and a great way to communicate outside of college hours'*

Some students found that it was easy to get sidetracked off topic and others said they preferred face-to-face discussions.

### **Social Networking**

Students were also asked for their views on the potential to use social networking sites to support their studies.

<b>Statement</b>	<b>Agree or Strongly Agree</b>	<b>No preference</b>	<b>Disagree or Strongly Disagree</b>	<b>Total</b>
I would welcome this development	34% (93)	26% (72)	38% (104)	100% (269)
I would rather keep Social Networking sites for private (non study related) activities	64% (174)	18% (51)	16% (44)	100% (269)
I already discuss topics I am studying with fellow students on social networking sites	26% (72)	24% (65)	49% (132)	100% (269)
I would like to discuss topics I am studying with my teachers and fellow students on social networking sites	23% (64)	29% (79)	46% (126)	100% (269)
I would like teachers to facilitate discussions about topics I am studying on a social networking site	23% (63)	28% (76)	48% (130)	100% (269)
I would be worried what teachers might see about me if they used social networking sites	38% (103)	29% (80)	31% (86)	100% (269)

Despite their familiarity with social networking environments students appear to be quite conservative in their views concerning their use to support their College work. With hindsight it may have been better to reorder the questions as the strong preference for keeping these environments away from their study activities may have influenced their subsequent responses. I don't believe that the results close the door on this as an area

for further investigation however it may be that it is dependent upon the particular nature of the relationship between the teacher and the students. It is possible that teachers who are already comfortable using these technologies themselves may get a more positive reaction than those for whom the whole environment is alien and even threatening. The statistic that 38% of students were worried about what teachers might see about them on these sites is illuminating. Whilst not directly connected to this particular action project it raises an issue that needs addressing. If students would be embarrassed by their online profile being seen by their teachers who are in the main supportive how much more damaging might these postings be if viewed by employers or university admissions tutors!

Despite their reluctance to adopt this technology as a learning aid students were quite forthcoming with suggestions on how it could be used. These are typical of the supportive comments:

*'A group could be made on either MySpace or Facebook, for students studying the same subject, to discuss the various parts of the subject.'*

*Able to access information more readily when at home.*

*'An easy way to ask a question if I'm stuck on some area of the subject, also a way for the teachers to see what areas they need to focus on or go over (if many questions asked about the same bit)'*

*'Facebook has a feature where friends can be sorted into groups and the user can set what profile a friend/teacher sees so i think using a social networking site such a Facebook would be a good idea! I could message teachers in an informal environment with any questions etc.'*

*'Facebook has allowed me to arrange meetings with my ICT teacher to talk about my work.'*

*'Home Work, Course Work deadline remainders could be posted. Sites such as Facebook will enable us to contact the teacher outside of college to ask questions related to Course Work and Home Work. Exam Question practice papers could be posted on sites like Facebook so we could revise as well as socialise in a more fun way.'*

## **UniversityWatch**

At first glance the UniversityWatch<sup>7</sup> forum might appear to be quite successful with 445 registered users. Of these 31 were members of staff who helped populate the initial database with comments about 15 different University Experiences. It was thought that this staff involvement might stimulate interest on the part of students however this did not appear to be the case as indicated by this comment from a student about their experience.

*I went on once but it seemed like a waste of time - visiting the unis gave me all the info I needed. The only things that seemed to be posted were stupid anecdotes and teachers' nostalgia!*

This may go some way to explaining why the total number of posts was ultimately only 36 and of these only 15 came from 414 students.

The questionnaire results are shown in the table below and provide some illumination on why the forum failed to develop a critical mass:

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<sup>7</sup> <http://universitywatch.freeforums.org>

Statement	Agree or Strongly Agree	No preference	Disagree or Strongly Disagree	Total
I was very interested in what UniversityWatch offered when I registered	25% (16)	33% (21)	41% (26)	100% (63)
I only visited UniversityWatch once to register	67% (45)	8% (6)	23% (16)	100% (67)
I revisited UniversityWatch several times	23% (15)	14% (9)	62% (40)	100% (64)
I posted information about Universities I visited	9% (6)	9% (6)	80% (49)	100% (61)
I was disappointed with the level of information available about the Universities that interested me	47% (27)	31% (18)	21% (12)	100% (57)
I forgot my username and password so never returned to UniversityWatch	38% (24)	27% (17)	33% (21)	100% (62)

These results seem to indicate that students who registered with the UniversityWatch ODF had initially positive expectations of how the site would help them as they researched their University Courses. This was certainly the expectation that was being stimulated by the promotional e-mails and messages used to launch the site. 47% expressed dissatisfaction with the level of information they found on the site once they had registered and only 21% disagreed with the idea that level of information was disappointing. These sentiments are supported by the comments from students such as:

*“A good idea however due to the size and lack of active members it didn't really provide the help it could have done.”*

*“I found the information on <http://www.thestudentroom.co.uk/> much more useful, lack of information on University Watch was a problem.”*

*“I lurked on UniversityWatch once or twice to get other peoples' impressions of Uni's I was considering.”*

*“I regret not going on it more often now but I have forgotten my username and password.”*

*“It didn't seem to be very active and I was unable to go to the earlier open days at unis I was interested in, so it could have been more beneficial.”*

*“Looked at it once, wasn't interested in what it offered so didn't go on it again.”*

*“Very few details about the universities I was interested in so I did not bother going back to it.”*

The site clearly lacked sufficient value or appeal for students to want to go back and use it again and with hindsight the forum was probably overcomplicated. Despite having a potential audience of 1400 clearly not enough information was posted at an early stage in the life of the ODF and students found the information they required more readily from other sources. These issues were further compounded by the need to use a user logon ID and password.

### **Psychology Forum**

The final element of data gathered in this investigation relates to the Forum initiated by a colleague in the Psychology department. Only a limited amount of data could be extracted from the survey so it is hard to draw significant conclusions from this. However one student in the group said the forum would be improved by:

*“More active participation from all people. Unfortunately for whatever reason, not everyone partook in the discussions as much as perhaps we should have.”*

This comment seems to accord with the data gathered in an interview with the teacher who used the forum. One measure of the success of an ODF is the participation rate. The students were divided into teams of 3 or 4 students. The least active groups had only 4 posts in their ODF thread whilst the most active groups had 28 posts the average being 12.4 posts per group. The teacher commented about the activity:

*“Some loved it some hated it. Some students disliked the fact that their grade depended upon the activity of other students. Some students felt uncomfortable using the discussion forum because they dislike using computers.”*

There are two factors here that need disentangling and it had been hoped that this discrimination would have been possible from the online survey.

The first factor relates to the use of an ODF. It is possible from the limited evidence available in this aspect of the project that student discomfort with the technology limited their ability to engage with the activity properly. The outcomes from the wider survey responses make this unlikely however it cannot be completely discounted as a possibility.

The second factor relates to the structure of the activity as a whole which bears many similarities to the work carried out on “knowledge construction”.<sup>8</sup> The studies cited all relate to work carried out with older (undergraduate or postgraduate) students who can reasonably be expected to have higher levels of emotional maturity and a greater willingness to exploit different learning strategies. Even among these

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<sup>8</sup> See further information on this concept in the discussion and also in the work by (Baxter, 2007); (Chen & Chiu, 2008); (Cheung & Hew, 2003) part 1 & 2; (De Smet, Van Keer, & Valcke, 2008); (De Wever, Schellens, Valcke, & Van Keer, 2006); (Pena-Shaff & Nicholls, 2004); (Schellens & Valcke, 2005); (Schellens & Valcke, 2006); (Vonderwell & Turner, 2005); (Vonderwell & Turner, 2005)

students it took time for students to adapt to the high level of cooperation that collaborative learning requires. It is also clear that the learning activities need careful planning to ensure that the outcomes provide significant benefit to the students. In this context the work done by these AS level students is innovative and bold. The students discomfort at losing control over the outcomes of their collaborative efforts is unsurprising and needs addressing. The activity ran for only two weeks about half way through the academic year. It would make an interesting Action Research Project in it's own right to introduce and develop collaborative learning activities with a group over an more prolonged period of time.

## DISCUSSION

There has been a significant level of research into the use of ODF amongst University level students. The areas into which this research has been carried out can be separated out into a number of key areas.

1. Learner Engagement
2. The role of the facilitator (teacher/moderator)
3. Collaborative Learning

### Learner Engagement

A key factor in the success or otherwise of ODF as a learning tool is the degree to which students actually participate. One study (Vonderwell & Zachariah, 2005) makes reference to three typical behaviours that have been observed within ODF. These were categorised as 'Workers', 'Lurkers' and 'Shirkers'.

- Workers participate actively in the discussion and participate actively in the discussion.
- Lurkers visit the ODF but make few posts being content to participate in a 'read-only' mode.
- Shirkers make a minimal level of participation with fewer visits and fewer posts to the site.

Vonderwell & Zachariah proposed a model to equalise the balance of participation through the creation of distinct roles that students would be required to adopt when participating in the discussion forum. They described the in the following manner as:

**Facilitator:** *Initiate the discussion; oversee the knowledge building process, the flow and direction of information.*

**Critical Reflector:** *Analyze and critique the posts, promote questions, engage the rest of the group to think critically about the issues related to the topic.*

**Summarizer:** *Summarize and reflect on the discussion and submit a two-to-three page report to the instructor to be posted to the class.*

It was found that when students were assigned specific roles in this way they maintained their online presence throughout the lifespan of the discussion and participated more frequently.

Another study (Yang, Li, Tan, & Teo, 2007) considered the individual psychological factors that motivate participants to participate in the forum. They identified 7 major motivational factors which can be broadly divided into two categories. The first category they classified as **Outcome Expectancy**. They used this to

describe a student's belief that participating in the forum would lead to a desirable outcome for themselves. A 'What's in it for me?' type of motivation. They identified four possible outcomes that lead to increased levels of student participation.

1. *Social Outcome Expectancy*. This recognises that student participation in ODF provides a new arena for people to express their individuality and interact with their peers. Students who believe that engagement in the forum will result in increased levels of status in the forum will demonstrate higher participation rates. Recognition from both classmates and lecturers may provide the social stimulus that encourages this participation. Since ODF are asynchronous in nature it is harder for any one individual to dominate discussion and so everyone can have a voice. This effect was observed in the Perspectives Forum which enabled a shy, dyslexic student to become quite bold and forthcoming in his contributions to a debate on theism.
2. *Hedonic Outcome Expectancy*. This term was adopted to describe the level of pleasure that students derived from using the ODF. In particular the way students feel empowered to take control and direct their own learning experience. The voluntary nature of ODF, especially when made available outside the four walls of the classroom, means that students are able to manage their own learning. Where forum provide opportunity for customisation and incorporate additional features such as video or images a high level of 'feel good' factor is experienced. Part of the success of the Perspectives Forum seems to be attributable to the enjoyment students gained from simply participating in the forum. For example, most students took advantage of the ability to create an 'avatar'<sup>9</sup> image to represent themselves online.
3. *Utilitarian Outcome Expectancy*. This term was adopted to describe the perceived benefit of the ODF. In other words the extent to which students believed that participating in the forum would result in a tangible learning outcome. This could be measured in terms of the knowledge they would gain from the forum or the skills that might be acquired from the sheer act of participating in the forum. The frustration expressed by students who participated in the Psychology ODF may have been due to a lack of belief on their part that the forum would result in any significant personal benefit. Equally one of the factors that militated against greater participation in UniversityWatch is probably the lack of useful information available to students in their initial experience of visiting the site. Unfortunately this is a 'Catch 22' conundrum as, without student participation, it is impossible to populate the forum

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<sup>9</sup> Avatar – is a term used to describe a graphical representation of a user's online presence. In ODF and online communities it is typically a two dimensional image which may be a real life photo of the individual or, more commonly, some other image chosen to express some aspect of their personality to other forum participants.

with sufficient information for it to achieve a critical mass of usefulness that encourages students to post their own comments. With hindsight this forum was too heavily engineered. In an attempt to provide structure and a navigable interface sections were provided for every University in the UK. This had a diluting effect on the posts that students actually made and increased the sense of scarcity of information in the forum.

4. *Perceived Importance of Learning.* The study found that students who value learning most highly are more likely to be motivated by the utilitarian outcome expectancy and so participate more fully in the process. Students who place less value on learning are more likely to be motivated by social or hedonic outcome expectancies. This factor is essentially a measure of the susceptibility a student may exhibit towards one or other of the previous motivating factors.

The remaining 3 factors can be gathered together under the heading **Subjective Norms**. This is an idea drawn from the theory of reasoned action or TRA.

5. *Peer Pressure.* Where students perceived that their fellow students were actively participating in the forum they can develop a motivation to catch up. This was demonstrated strongly in the Perspectives Forum where a circle of friends became highly engaged in the forum and at one stage were competing with each other to see who could post the most comments. This phenomena took place without a significant decline in the quality of the comments or degenerating into social chit chat. What was clear however was that the posts were occurring in an almost synchronous or pseudo-real-time manner as they were online concurrently.
6. *Superior Pressure.* This factor describes the influence the teacher or instructor has upon the ODF. As we shall see in another study it is hard to quantify the optimum level of teacher input that will stimulate effective discussion to take place. Too little involvement may result in lowering students valuation of the activity, whilst too much may inhibit student input since the 'correct answers' will be too readily forthcoming from the expert. However a positive level of superior pressure undoubtedly makes it more likely that students will have a positive intention towards participation.
7. *Conformity Motivation.* This term describes the degree to which an individual is susceptible to peer or superior pressure. The greater the students desire to conform the more likely it is that these pressures will result in increased participation in the ODF. Where the pressure is interpreted as unwelcome coercion the end result is de-motivating. It is possible that another factor in the lack of ongoing participation in UniversityWatch may be due to a perceived compulsion to participate in formal College sponsored activity where the lead actor was unknown to the majority of students.

### **The role of the facilitator (teacher/moderator)**

As has already been alluded to, when an ODF is used in an educational context a significant actor is the teacher who initiates the forum. The question is what role they should adopt in order to encourage a fruitful discussion. Two studies by the same authors (Mazzolini & Maddison, 2003) and (Mazzolini & Maddison, 2007) explore this idea using the metaphor of sage, guide and ghost to describe different roles that instructors have been observed to adopt.

The '**sage on the stage**' role describes the activity of an instructor who has a highly visible posting presence in the ODF. They lead the discussion and often close them off. Mazzolini & Maddison found that when an instructor regularly adopts this role then students are inclined to defer to the 'sage's' expert knowledge and become less inclined to post many comments. Students perceive such behaviour as evidence of enthusiasm on the part of the instructor – a positive factor. However they are de-motivated from participating greatly as they know that before long the answer will be provided for them.

The '**guide on the side**' role describes the activity of an instructor who intends that the primary posting activity should be student led. The intention is that students should initiate discussions and answer each other's questions. The role of the guide is to moderate comments where necessary and provide 'signposts' to where the students might find answers rather than chipping in themselves.

If these roles are considered to be positions on a spectrum then the '**ghost in the wings**' role is at the opposite extreme to that of the sage. The ghost is an instructor who is invisible to the students, more an observer than a participant. Here students operate with complete autonomy within the learning environment however the lack of instructor participation is interpreted as a lack of enthusiasm and student motivation may decline as a result.

Mazzolini & Maddison found the most effective role to be the '**guide on the side**' however it was important that instructors ensured that their posts were not simply answers to questions but consisted largely of follow-up 'Socrates' type questions. Effective instructors tailored their posts to the phase of the ODF with early posts being designed to stimulate discussion, intermediate posts being designed to guide the discussion along and concluding posts being used to wrap the discussion up. Some instructors failed in their attempts to increase the amount of discussion by initiating new postings. Clearly enthusiasm on the part of the instructor is not enough and posts need to be used in a more sophisticated manner to achieve the desired effect of raising the level of debate.

This finding is supported by the work of (Vonderwell, 2003) who states that '*online instructors need to be careful in structuring a feedback mechanism to encourage student enquiry and collaboration rather than quick, immediate answer to a question that can itself be a barrier for effective student learning.*'

### **Collaborative Learning**

Clearly ODF should not be an end in themselves, rather they should be a tool to develop and enhance the learning experience for students. Analysing the effectiveness of learning is never a simple matter and there are particular problems when using and ODF. Although the forum provides a clear text based trail of the interactions of students it lacks the conventional social cues that face-to-face interactions provide. (Brace-Govan & Clulow, 2001) and (Brace-Govan, 2003) report ways that they have tackled this aspect of the subject. The later document outlines a powerful assessment matrix for recording various learning elements citing the work independently carried out by Salmon (2000), Tuckman (1965) and Gunawardena (1997).

A key feature of ODF is the way in which students of varying abilities are able to work together and arrive at learning outcomes which are potentially greater than that of any individual student. Work such as (Pena-Shaff & Nicholls, 2004), (Schellens & Valcke, 2005), (De Wever, Schellens, Valcke, & Van Keer, 2006), (Schellens & Valcke, 2006) and more recently (De Smet, Van Keer, & Valcke, 2008) consider the theoretical basis for understanding how collaborative learning in ODF enhances knowledge construction. Their findings point to a more intense and more task oriented approach on the part of students involved in ODF which in turn leads to higher level knowledge construction taking place. These results are more pronounced in small to medium size groups with 10-12 being the optimum number. Groups significantly larger than this suffer from having too many messages and this in turn results in cognitive overload. Perhaps not surprisingly it is also important that the tasks are structured well to maximise the benefit of using this media. Tasks that are broken down into phases requiring students to progress through a complete hierarchy of knowledge processing are the ones that are most productive. The five phases identified are:

- Phase 1: sharing/comparing – observation; agreement; corroboration; clarification; definition
- Phase 2: dissonance/inconsistency – identifying and stating; asking and clarifying; restating and supporting
- Phase 3: negotiating what is to be agreed (and where conflict exists)/co-construction – proposing new co-constructions that encompass the negotiated resolution of differences
- Phase 4: testing tentative constructions – the new constructed statement of ideas may then be tested and matched to personal understanding and other sources (such as the literature)

- Phase 5: statement/application of newly constructed knowledge – final revision and sharing again of the new ideas that have been constructed by the group

(Chen & Chiu, 2008) note the importance of constructive disagreement in order for an ODF to result in fertile discussion and considers whether teachers might find the strategy of anonymously seeding discussions with controversial comments productive.

(Baxter, 2007) provides a detailed account of how ODF have been used with striking results to encourage undergraduate students to read about Psychology earlier and in greater depth. The programme consisted of structured online tasks that replaced a lecture series. Students were allocated to work in groups of 6 or 7. Each group would then negotiate to divide the workload between the group members who would then produce written answers to their part of the task. The various contributions would be collated together by their elected 'postperson' to produce a combined essay. This essay would be refined through a revision process as each student comment on it. The final product would be submitted and the best result would be made available as a 'model answer' to the whole cohort.

Further examples in the literature of the way collaborative online learning can enhance the level of understanding achieved include (Vonderwell & Turner, 2005) who considered active learning and preservice teachers' experiences in an online course, and (Cheung & Hew, 2003) part I (Cheung & Hew, 2003) part II who evaluated the participation and quality of thinking of pre-service teachers in an asynchronous online discussion environment. Both cases highlight the importance of planning the ODF learning experience to ensure the quality of the learning outcomes. A key element of this is also to consider what preparation the students need to be able to participate effectively.

## CONCLUSION

ODF have the potential to be a powerful tool in the educator's toolkit to raise the level of student engagement in their subject. ODF can be used at a variety of levels such as:

- A common area for students to seek support such as the FAQ sections of many websites. The support given could be from peers and/or teachers.
- An area where students are invited to discuss ideas that have been raised in lessons.
- A more structured and planned holistic learning experience requiring collective effort to produce a collaborative final product. The ODF provides a vehicle in which students can travel together to reach the final destination. It also provides a trail that the tutor can use to evaluate the individual elements of learning that have taken place.

These examples are given to indicate a range of applications rather than as an exhaustive list.

Key factors in ensuring the success of an ODF activity include:

- Student (and staff) motivation. Where possible it is helpful to tap into as many of the motivating factors discussed earlier as possible. Evaluate the activity from a student's point of view and answer the "What's in it for me?" question.
- Staff and student roles. Effective forums are managed by enthusiastic staff who adopt a guide role posing Socrates type questions and only indicating where answers may be found. Students should be encouraged to take on specific active roles within the forum, possibly on rotation.
- Planning the phases of the learning process for the complete lifecycle of the forum. This is fundamental to the success of higher knowledge construction collaborative online learning activities to ensure full engagement throughout the whole activity. At its best this can result in high levels of concentration and deep cognitive activity.

There are various parallel technologies available upon which to base this kind of learning activity. The technology should support the learning invisibly. It is vital that all the participants are comfortable with the technology, or can be supported to be in this position at a very early stage. Possibilities include:

- Forum hosted within existing technologies in College e.g. (Vonderwell & Turner, Active learning and preservice teachers' experiences in an online course. This has the benefit of becoming increasingly familiar amongst teachers and students so provides a gentle introduction.

- Forum hosted within specialist forum websites such as Freeforums. These can be heavily customised to provide an attractive and multi-featured ODF. The administration does require some specialist knowledge and support for teachers and students.
- Forum hosted on Social Networking sites such as Yahoo Groups or Facebook groups. Technologically these lie somewhere between TurnitinUK and Freeforums. Facebook in particular has seen a massive growth in uptake over the last year across all age groups. Teachers and students will want to consider how their privacy might be affected and the potential interface between their professional and private lives.

### **Future areas for research.**

Personally I have found this work with ODF stimulating and exciting. I am sure that new ways will be found to develop the ideas explored this paper. At a personal level I am most excited by the possibilities of using Facebook to support educational activity. Whilst some students I surveyed expressed concern over College and study intruding into their social sphere I am anecdotally aware that students already use Social Networking tools on an ad hoc basis to support their studies. That being the case it seems to me that the time is ripe to debunk and demystify the fear felt in some quarters. Like any other technology Social Networking is intrinsically neutral. It is people and the way that they use any technology that determines whether it has a positive or negative impact. As a beacon College I would like to think that we can lead the way in using these new and exciting technologies for positive purposes.

Another technology which has become ubiquitous is the mobile phone. In a similar way I would like to explore ways to harness the power of the mobile to support learning so that it becomes the friend of the teacher rather than the enemy it is so often seen to be.

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**APPENDIX 1 – PERSPECTIVES ON SCIENCE STUDENT QUESTIONNAIRE**

1. Are you male or female?
2. Do you consider yourself to be?

*Christian*      *Muslim*      *Hindu*      *Jewish*  
*Buddhist*      *Sikh*      *No religious faith*      *Other*  
 If other faith please specify

3. Do you hope to go on to university in the next three years?      Yes      No
4. If 'yes' what subjects do you hope to study
5. Do you have any specific career intentions?      Yes      No
6. If yes please specify.
7. Why did you choose to do the *Perspectives on Science* course
8. What have you liked about the course so far?
9. What would help you to enjoy the course more as it progresses?
10. What do you feel you have gained from the course so far?
11. Please indicate your level of agreement with the following statements by ticking the appropriate box

Strongly agree  
 Agree  
 Neither  
 Disagree  
 Strongly disagree

a) The course gives lots of opportunity for discussion					
b) Discussions on the course have consistently challenged my ideas					
c) I do not feel I have learned much from the course so far					
d) The course has begun to change the way I think about science					
e) The course is increasing my knowledge and understanding of science					
f) The course is making me sceptical about the value of ethical discussions					
g) I have already thought about my research topic for the report and presentation					
h) Scientists should not have to concern themselves with social, ethical and philosophical matters					
i) This course is making me think more deeply about the objectivity of science					

12. If you have thought about it, give details of your proposed research project.
13. Why are you interested in this research topic?
14. How has your tutor supported you on the course so far outside of whole class lessons? (e.g. one-to-one meetings, seminars, e-mail discussion)
15. Do you like the way the course is assessed?                      Yes                      No
16. Please give your reasons for your answer to the previous question
17. How confident do you feel at the moment about the prospect of giving a presentation on your chosen research topic towards the end of the course?

*Very confident   Quite confident   Quite nervous   Very nervous*

18. Please use the space below if there is anything you would like to add about your experience of the *Perspectives on Science* course so far.

## APPendIX 2 – SURVEY OF student computer habits

1. Gender?            *Male/Female*
2. Which of these best describes you?
  - Student in the second year of a two year course (mainly A2 subjects)
  - Student in the first year of a two year course (mainly AS subjects)
  - Student in the first year of a one year course (mainly GCSE or Level 2 subjects)
3. What subjects are you studying this year (e.g. A2 Physics, A2 Mathematics, A2 Media Studies, AS Photography)
4. For each of the following locations where you use a computer (for college or personal activities only) please rank them according to the amount of time you use them with 1 being the one you use most.
  - College - Dell
  - College - eAssessment Centre
  - College - Occasional lesson in shared subject area computer suite
  - College - Lesson timetabled in computer room
  - Home - computer for your exclusive use (e.g. in your bedroom or own laptop)
  - Home - family computer shared with siblings and/or parents
  - Home - parent's privately owned computer
  - Home - parent's company computer
  - Work - company computer (if you use this for college or personal activities only)
  - Other
5. If you answered other to Q4 please explain in the field below:
6. Do you have internet access at home?
  - Count    Percentage
  - Yes - standard broadband
  - Yes - wireless broadband
  - Yes - dial up modem
  - Yes - but not sure what sort
  - No
7. Are you aware of the following services provided by the College via the internet (tick all that apply)
  - CristalWeb
  - SixthNet via CristalWeb
  - VPN (Virtual Private Network) - User area and shared folder access
  - VPN (Virtual Private Network) - College e-mail access
  - None
8. Which of the following services provided by the College via the internet do you use (tick all that apply)
  - CristalWeb
  - SixthNet via CristalWeb
  - VPN (Virtual Private Network) - User area and shared folder access
  - VPN (Virtual Private Network) - College e-mail access
  - None
9. Which of the following Social Networking sites are you aware of? (tick all that apply)
  - Bebo
  - MySpace
  - Facebook
  - Flickr
  - MSN (Messenger)
  - AIM
  - Kodak EasyShare Gallery
  - Picasa
  - Yahoo Groups
  - Google Groups
  - MSN Groups
  - Friends Reunited
  - Second Life
  - None of these

10. If you regularly use Social Networking sites please rank them in order with 1 being the one you use the most.
- Bebo
  - MySpace
  - Facebook
  - Flickr
  - MSN (Messenger)
  - AIM
  - Kodak EasyShare Gallery
  - Picasa
  - Yahoo Groups
  - Google Groups
  - MSN Groups
  - Friends Reunited
  - Second Life
  - None of these
11. A feature of many lessons in College is getting students to discuss ideas. Which of the following have you experienced in lessons you have attended? (Tick all that apply)
- Teacher led class discussion
  - Student led class discussion
  - Paired discussion activities
  - Small group discussion activities
  - Teacher initiated electronic discussion in an online forum, group, chat room or messaging service
  - Student initiated electronic discussion in an online forum, group, chat room or messaging service
  - None of these
12. If you have used Teacher initiated electronic discussion in an online forum, group, chat room or messaging service during lessons please indicate which of these services hosted it. (Tick all that apply)
- TurnitinUK
  - Yahoo Groups
  - Google Groups
  - iPhorum
  - Freeforums
  - Facebook
  - not sure or can't remember
  - Have not used such a forum
13. If you have used Teacher initiated electronic discussion in an online forum, group, chat room or messaging service during lessons please how strongly you agree with the following statements.
- I enjoyed using the forum
  - I felt able to express my opinions better than in class discussions
  - I contributed more than I would in class discussions
  - I 'listened' to the views of others more than I would in class discussion
  - I took more care to develop my own ideas than I would in class discussion
  - I developed a better understanding of the topic
  - I would recommend online forum to other teachers
  - I found it easy to use the forum
14. If you have used Teacher initiated electronic discussion in an online forum, group, chat room or messaging service during lessons please state the subject and describe your experience below.
15. If you have used Teacher initiated electronic discussion in an online forum, group, chat room or messaging service during lessons what do you feel would make the educational experience more valuable.

16. If teachers were to use social networking sites such as Facebook or Myspace to support their lessons please state how strongly you would agree with these statements.
  - I would welcome this development
  - I would rather keep Social Networking sites for private (non study related) activities
  - I already discuss topics I am studying with fellow students on social networking sites
  - I would like to discuss topics I am studying with my teachers and fellow students on social networking sites
  - I would like teachers to facilitate discussions about topics I am studying on a social networking site
  - I would be worried what teachers might see about me if they used social networking sites
17. Please comment on how you think Social Networking sites such as Facebook or Myspace could be used to help support you in your studies.
18. If you registered for UniversityWatch please indicate how strongly you agree with the following statements.
  - I was very interested in what UniversityWatch offered when I registered
  - I only visited UniversityWatch once to register
  - I revisited UniversityWatch several times
  - I posted information about Universities I visited
  - I was disappointed with the level of information available about the Universities that interested me
  - I forgot my username and password so never returned to UniversityWatch
19. If you registered for UniversityWatch please comment on your experience in your own words.
20. Please indicate what follow up you would be interested in.
  - I would like the results of the survey sent to me.
  - I would be willing to discuss my answers in more detail.
  - I would not like to be contacted about this survey again.
21. That concludes the survey. Thank you for taking part. If you indicated you would like to receive follow up to this survey please provide a valid e-mail address where you can be contacted. You will only be contacted in connection with this survey. Your address will not be given to any third party organisation. N.B. You should be aware that supplying an e-mail address may make it possible to identify you personally. If you wish to remain anonymous please do not supply your e-mail.

### APPENDIX 3 - DISCUSSION FORUM – TEACHER’S REFLECTIONS

1. Teacher's Name	Jessica YATES
2. Subject	Psychology
3. Group	S8psy.19; S8psy.20; S8psy.21
4. Number in group (males/females)	5:13; 6:13; 9:11
5. Dates forum was used (start/finish)	2 weeks 29/02/08 – 14/03/08
6. What topic(s) was the forum used to support?	Individual differences
7. How was the forum used (in lessons, outside lessons, etc.)?	Students were required to complete an assessed assignment on “Individual Differences” in small groups of 3/4 students. All students to be awarded the same grade so cooperation and team work essential. Discussion forum was used as a means for students to communicate and cooperate in completing the task with the teacher able to view and monitor this process. Launched using a 40 min session at the computers otherwise the use of the forum took place outside lessons.
8. What was the role of the teacher (initiator, facilitator, participant, etc.)?	Teacher acted as an observer having set the forum up. Also answered specific questions.
9. How successful was the forum (number of posts, participation rate, quality of responses, etc.)?	S8psy.19 – 6 groups 6, 10, 15, 27, 11, 27 responses S8psy.20 – 6 groups 13, 9, 4, 8, 6, 4 responses S8psy.21 – 6 groups 15, 5, 13, 9, 28, 14 responses
10. How enjoyable was the experience for the teacher and the students?	Some loved it some hated it. Some students disliked the fact that their grade depended upon the activity of other students. Some students felt uncomfortable using the discussion forum because they dislike using computers.
11. How well did the forum meet your expectations?	Enabled me to see who had contributed to the discussion. Able to monitor student communications. Group work. Learning from each other both

	structure and content.
12. What were the positive outcomes?	Yes but it needs further marking and analysis.
13. What if any where the negative outcomes?	Some students have not understood the point of the exercise.
14. Where there any unexpected outcomes?	Stronger students did not like the fact that their 'grade' depended upon the work of their weaker team members. Disadvantaged students who were less comfortable using PCs.