

## The 21st century tutorial

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## The 21<sup>st</sup> Century Tutorial

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**Abstract:** The main challenge for Open University (OU) Tutors using online Tutorial approaches is the need for a good level of interaction with and between students. Currently Blackboard™ Collaborate branded as OULive is the tool used by the OU to allow students and tutors to engage in 2 way (synchronous communication) online activities. Online Tutorials built around a “whiteboard” centric tool lack the range of visual cues between Tutor and Student group which are available in a face to face Tutorial situation. The lack of visual and to an extent aural cues require the Tutor to take a different approach to the organisation of the Tutorial and to look for ways to replace the cues that are lost in the online world. This paper seeks to explore how online tutorials are utilised on the Open University course TU100 My Digital Life to encourage student engagement in the tutorial activity and will discuss how the authors’ use the OULive Tool to engage students in online learning activities. The paper aims to discuss the solutions developed through experience of delivering synchronous tutorials over a number of years and tries to provide some guidance to fellow practitioners. The paper will conclude by identifying that good preparation is essential, that problem solving activities in breakout rooms engage students and that there is a need for staff development to link theory with practice.

**Keywords:** e-learning, distance learning, synchronous communication, breakout rooms, problem solving activities

### 1. Introduction

#### 1.1 What is TU100 My Digital Life

The course TU100 is a level 1 (first year) Open University (OU) course which aims to cover core skills such as communication, technical writing, an introduction to technology and programming. It is a 9 month distance learning course, so the pedagogy employed to support students must reflect this. Students are provided with printed materials, a Calendar based course website which provides direction on what and when to study, access to various forums such as a Tutor group forum where messages can be exchanged at different times (asynchronous) discussions, a Wiki to discuss ideas collaboratively and the OULive synchronous communication tool. Students are organised into groups and each group is allocated a Tutor. There are 5 Tutor marked assignments (TMAs) with an end of module assessment (EMA) marked by a different Tutor. All assignments are submitted electronically.

Many TU100 students are new to higher education so a course such as this needs to bring them up to speed in the range of study skills such as note taking, communication and time management skills. Experience has indicated that time management is a key skill that new students and in particular distance learning students need to master.

#### 1.2 Challenges on Tutoring TU100

Attendance at tutorials is an issue for TU100 Tutors. Goodfellow (2014) identifies a number of factors that affect tutorial attendance on a range of OU courses including TU100 and experience has shown that a significant proportion of students in a Tutorial group will not attend either Face to Face (F2F) or online tutorials. Nevertheless Goodfellow (2014) reports findings of “92% of students who attended one or more F2F tutorials, and 86% of those who attended one or more online tutorials agreed that the tutorials were helpful for understanding concepts and ideas that they encountered in the module materials”. So for the students who do attend the effort appears to be worthwhile.

Wong and Fong (2014) suggest that a better understanding of the learner’s impetus and attitude to technology use will help leverage the deployment of e-learning within a course. Wong and Fong (2014) have also identified that the students’ view of the e-learning environment used and the learning materials provided by the system could have a bearing on the students’ engagement with the process.

With the increasing use and emphasis of online technology at the OU to support student learning there is a danger that the interactions between Tutor and students will be less “engaging” and will result in a stilted experience for both tutor and students. A significant challenge for both the OU and individual Tutors is to encourage more students to engage with synchronous tutorial provision.

## 2. TU100 tutorial strategy verses Day University Tutorial Strategy

There are a number of points that need to be considered when comparing the TU100 Tutorial approach to that of a “traditional” 12 week module where students are attending on a daily basis in full time mode. A popular approach for computing modules in day Universities is to have lectures, labs and face to face tutorials on a weekly basis. TU100 students are predominately part time so will be studying in the evening and weekends with tutorials less frequent than once a week.

### 2.1 Online Learning Considerations

One delivery strategy for TU100 tutorials adopted by the authors is to have a one hour on line tutorial one week prior to a face to face tutorial. Typically face to face tutorials are 2.5-3 hours in duration with a couple of day long activities (day schools) usually on a Saturday at key points in the module. The intention at all tutorials is to provide practice on topics related to the forthcoming Tutor Marked Assignment (TMA) and therefore support students studying in distance learning mode.

Woodcock et al. (2015) postulate that a student’s capability to learn using e-learning systems is based on four hierarchical conditions: “(a) ease of use, (b) psychologically safe environment, (c) e- learning self-efficacy, and, (d) competency.” (Figure 1)

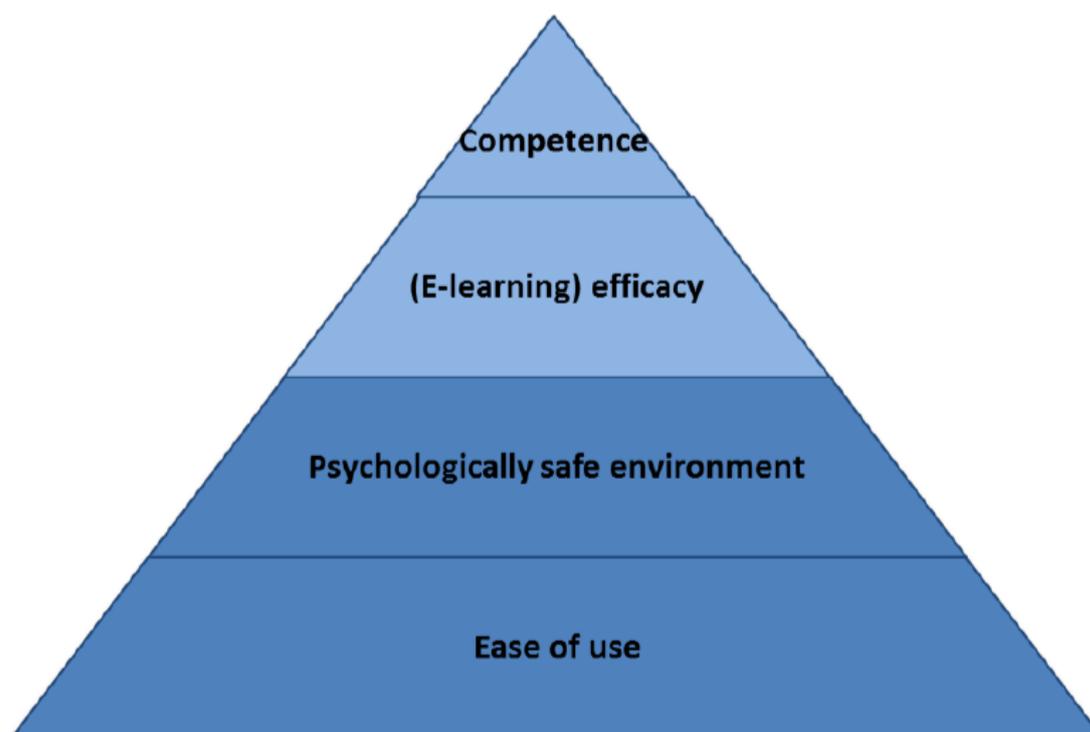
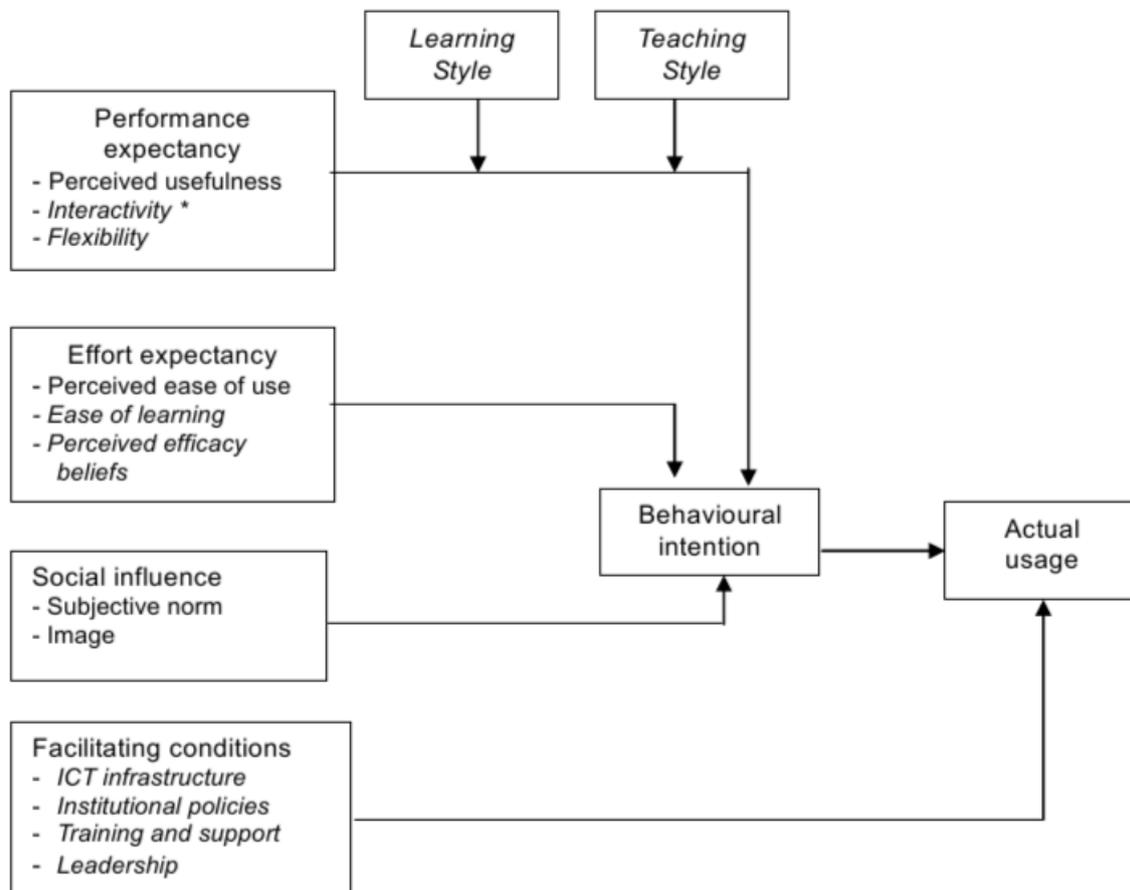


Figure 1: E-Learning Competence Hierarchy (Woodcock et al.,2015)

This model indicates that a fundamental for any e-learning engagement is the identification and use of an e-learning tool that is easy to use. If this primary goal is not met then e-learning may be met with resistance from the student. The third tier is the ability for the student to feel at ease with the environment engendering

self-assurance for participation. If this is not achieved then this will discourage the student from taking part in activities. Student engagement is critical and so providing an enjoyable and interesting tutorial is important.

An interesting model developed by Umrani-Khan and Iyer (2009) attempts to take into account “the attitudes of students, teachers and institutional support” when assessing the engagement of students with e-learning. This model, known as, E-Learning Acceptance Model (ELAM) (Figure 2) centres on four factors: Performance expectancy, Effort expectancy, Social influence and Facilitating conditions.



**Figure 2: ELAM (Umrani-Khan and Iyer, 2009)**

The Performance expectancy is based on what both the student and teacher consider to be a gain in the “teaching-learning process.” The Effort expectancy is based on what both the student and teacher consider to be the level of effort required to use the e-learning tool. The Social influence is based on what both the student and teacher consider to be a social pressure to use e-learning. Facilitating conditions are based on what both the student and teacher consider to be encouragement on the institutions part to use e-learning. In the case of the OU on-line learning and learner support is a key part of the institution’s mission.

From the aforementioned models it can be noted that the ease of use of the chosen e-learning tool can play a defining role for both the student and Lecturer engagement. Both must feel a need to engage to properly utilise the e-learning tool.

Students need, and want, a system that is intuitive to use and Tutors need, and want, a system that is intuitive and easy to develop material for.

While the synchronous communication tool that is on offer is to an extent fixed, there are a number of approaches that underlies its use and the TU100 Tutor needs to become familiar with these different approaches.

Anderson and Dron (2010) define three distance learning pedagogies which have developed over time: Cognitive-behaviourism, Social-Constructivism and Connectivism. The emphasis of Social-Constructivism and Connectivism pedagogies is centred on the rise of online technology and social networks for the ability to deliver learning that will allow the student to “Discuss, create, construct ... connect, create, and evaluate.” This should ultimately be at the heart of both a good e-learning tool but also the approach embraced by the Tutor to e-learning. This is key to the problem solving approach taken in TU100 Tutorials.

Adopting a constructivist approach to task development involves building upon the students’ current knowledge base through problem solving activities that can be individual in nature or group based (Westbrook et al. 2013). The group approach can work well when combined with the idea of “breakout rooms” in OULive, an area that groups of students can use to discuss tutorial problems.

## **2.2 What constitutes a TU100 on line Tutorial – Using the OULive Tool**

OULive provides a virtual room in which a tutor can meet with students in order to conduct some form of learning activity. OULive is an example of a synchronous e-Learning tool in which multi-way real-time communication is possible (Lim 2010).

The key activity and main purpose in a TU100 Tutorial regardless of whether it is on line or face to face is problem solving. Taking an online approach requires more preparation to ensure that the electronic environment is set up appropriately. There are a number of tools that are available in OULive that the tutor as the moderator (participant with greater privileges) can use to conduct the learning activity. These include

- Video communication
- Audio communication
- Text Communication globally or to individual students within the room
- The ability to record the proceedings
- A white board area
- Voting options
- Breakout rooms for sub groups
- Multi choice type quizzes to check progress and understanding

Video communication is not used extensively but has been used to illustrate the effects of a Sense (MIT Scratch) program running and displaying results on the course supplied Sense Board. Audio communication is the main communication technique backed up by some text messaging in OULive to students either as a group or individually (Heiser & Furnborough, 2013). Session recording requires all the parties involved to agree to the session being recorded. White boards provide areas to display information such as instructions and exercises and are areas where Tutors and Students can write and draw. Voting provides a quick means of checking if a point being made has been understood.

A typical on-line tutorial starts with a pre-prepared white board which is used to provide direction for the activities, with the whiteboard prepared from PowerPoint slides. When students log in they arrive in the main room and this is where activities start with direction provided by the Tutor using the white board to provide information on the forthcoming activities. Students join the session individually and once a cohort is formed the tutorial starts properly. It is important to utilise the quiet time as students join to instigate verbal communication with individual students and as a small but increasing group. This is a real attempt to break the ice and to encourage students to communicate with each other rather than just lurk in the background. The collective presence of having everyone in a single physical room is clearly not possible in the on-line world. The Tutor workload is therefore much harder because there are no visual cues as to what an individual is doing.

Practical exercises are a core element of the Tutorial and are selected to provide practice on topics covered by the forthcoming TMA.

Typical exercises based around problem solving activities include:

- Numerical calculations using standard form
- Producing mind maps as a means of note taking
- Programming exercises in Sense to practice sequence selection, iteration, using broadcast messages and controlling the “Sense board”
- Citation and referencing exercises

Experience has shown that utilising a team teaching approach helps in the organising and monitoring of activities. This is particularly useful when there are several breakout rooms being used. Having 2 tutors working together helps to reduce the work load if there is a large group and allows the development and planning of activities to be divided between them.

Breakout rooms are a good means of providing focus for an activity allowing students to have a location in which to tackle specific problems set by the Tutor. Breakout rooms can be used periodically throughout the online Tutorial session to allow a number of topics to be covered. OULive provides a means to randomly send students to a breakout room. This approach helps to generate new interactions between students and can help to develop a sense of community. Once in the breakout room a new whiteboard is available which can be used to provide instruction to the students and is available to students to construct and record their answers. The tutor(s) can then move between the breakout rooms and monitor the level of activity that is going on. Normally a time limit is imposed and the students and their whiteboards are brought back into the main OULive room for some further discussion. This approach of using breakout rooms can be good for “brainstorming” type activities (Armbruster et al., 2009).

Experience of using break out rooms is positive. Students are generally happy to discuss the task in hand and use verbal communication with each other to achieve this. This is contrary to what happens in the “main” OULive room where some students are reluctant to talk, preferring to use text, voting etc. to communicate with their fellow students and the Tutor. To round off a particular learning activity within the Tutorial pre-prepared multi choice type quizzes can be used to check on the level of understanding of the student group. These are typically carried out with everyone back in the main room. Students are typically given a set period of time to attempt the quiz and when everyone is finished there is scope for some discussion about the answers. Experience has shown that this type of rounding off activity can help to consolidate the discussions that were being carried out in the Breakout rooms with the more free flowing discussions from the breakout rooms flowing into the main OULive room.

It is noted by Wong and Fong (2014) that students have a desire for “social interaction in their learning” which breakout rooms can offer. It is interesting to note that students generally work better when left to solve a problem in a breakout room where the Tutor involvement is less direct. So breaking the Tutorial down into student centred learning tasks utilising breakout rooms when student number are high may be the way forward.

### **3. What have we learnt?**

There are a number of important lessons that have been learnt from using OULive to support students on TU100. These are:

- Ensure that you are well prepared with materials ready to “distribute”
- Think through what needs to be done to create the “electronic” material and activities
- Start communication right away with students as they arrive.
- Break the task down into self-contained learning episodes
- Have break points that allow you to evaluate the activities so far
- Consider “team” teaching with a colleague to reduce workload.
- Consider using 2 monitors with the PowerPoint slides on one and the OULive session on the other.
- Practice, practice and practice again using the OULive tool
- Use introductory student “training” sessions for a gentle introduction to the OULive tool (Heiser & Furnborough 2013).

Good preparation and early communication between students and tutor in the on line Tutorial are important. The Tutor needs to prepare a White Board file to provide visual details of the activities and to accommodate interaction. This is a non-trivial task and cannot be left to the last minute. The opportunities for visual cues are very limited so it is important to establish communication with individual students and to encourage them to interact with their peers. The aim is to reduce lurking where students are on line but not participating. Making it clear when an activity has reached a specific end point is important. A short review helps to focus students' thoughts on what they have or have not achieved. Team teaching provides a second pair of eyes to help review the work being carried out. A well planned Tutorial can be led by different tutors at different points and helps to share the workload. Two Monitors allow you to have your original PowerPoint slides on a separate screen and to look ahead at your next Power Point slide ready to move on when appropriate. Familiarity with the tool being used is important. You need to at least be familiar with the basic components in order to keep up a good flow.

#### **4. Future Work**

There are a number of areas that will continue to be explored and new ideas that can be developed.

One new area that is currently being evaluated is the use of a graphics tablet for the Tutor to allow better annotation on the white board.

Other approaches revolve around revisiting some of the exercises that already exist. These include developing some drag and drop activities to allow students to practice writing appropriate citations and the corresponding references. A similar approach can be used in exercises involving writing numbers in Standard Form.

Organisation support for using OULive is available in the form of an additional tool called Collaborate Plan which helps with the automation of some features of the online Tutorial in OULive.

Early Communication was identified as an important feature that needed to be started early in the Tutorial to encourage students to speak. Thought is being given to the "gathering" period and to how we can encourage students to arrive 10 minutes early and to use this period as a "get to know you" and "are there any general questions" session.

Thinking through how the learning activities can be made student centric for use in breakout rooms with the Tutor visiting periodically to check on progress and answer questions is an on-going process which is building session on session.

Ideally the online activities should promote directed discussions in the associated Tutor Group Forums as well to help develop a good community of practice (Wenger 2015).

#### **5. Conclusion**

OULive provides online meeting facilities and a range of tools which allow students and tutor to engage in learning activities. Using OULive to good effect requires good preparation on the part of the Tutor and a good level of engagement on the part of the student. Tutors need to develop a strategy that keeps "lurking" to a minimum and encourages students to participate more. The aim is to encourage students to identify topics with which they are experiencing difficulty.

The tools provided in OULive supply a good level of functionality and if utilised appropriately provide the basis for interesting learning activities. The price that requires to be paid is good if not meticulous preparation to ensure a good flow through the activities in the Tutorial. On the flip side there is still the need to be spontaneous on occasions.

The TU100 Tutor will benefit from an understanding of the theory of delivery for the on-line world and there is scope for building this into staff development activities. Staff development opportunities such as the Tutor Moderators OU Live Advanced Course offered by the OU, helps to establish this link between theory and practice.

There are however some aspects of on line learning that are difficult for the TU100 Tutor to influence. One specific example is the creation of an active community of practice within the Tutor group. Synchronous activities require commitment on the part of students as well to turn up and participate. Balancing workload with other commitments such as work, family life etc. can be difficult which is why many students choose to study with the OU, but this is compounded by the increasing need to participate in both synchronous and asynchronous activities. The Tutor can make a valuable contribution to the learning experience by providing an interesting and interactive Tutorial but there is work to be done to convince students that it is worth while participating in this type of activity. An emphasis on a more student centred problem solving approach in breakout rooms could be a step forward in helping to convince students to participate. As Goodfellow (2014) pointed out 86% of students surveyed who attended one or more online tutorials agreed that the tutorials were helpful for understanding concepts and ideas that they encountered in the module materials”.

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