COURSE DESCRIPTOR

A. Course name
The Why and How of Video in Education (TWAHOVIE)
https://www.moodle.is.ed.ac.uk/course/view.php?id=960#section-1

B. Normal Year Taken
Any

C. Course Level
SCQF Level 11 (Postgraduate)

D. Home Subject Area
Bill Murray House School of Education: Education

E. Course Organiser
Dirk Schwindenhammer

F. Time Commitment
200 hours of study.

G. Short description
Due to technological advances, the production, distribution and consumption of video is made financially affordable and manageable to virtually everyone. Educational institutions around the globe are making increasing use of this technology, be it to reach more students, reduce costs or create new ways of teaching and learning. Higher Education has however neither placed the approach in a wider intellectual framework, a theory or philosophy of video use in education, nor have we sufficiently learned which practical aspects of video production should be applied and researched for the greatest educational benefit.
This course aims to provide a foundation for both, the why and the how of video in education, delivering necessary scientific research as well as practical applications based on professional production standards.

H. Default Course Mode of Study
Online distance learning

I. Default Delivery Period
Semester 1 or 2

J. Intended Learning Outcomes and Components of Assessments
The overarching Intended Learning Outcome (ILO) for this course is to **develop a critical evaluation of video use in education.**

Learning Outcome To reach the ILO, students will:	Assessment
1a. make personally relevant experiences with video use in an educational context	**1b. -**
2a. gain fundamental scientific knowledge relating to the use of video in education	**2b. Group Presentation** Groups of students will research and present individual scientific aspects of video in education and present their topic to the members of the course. (8 credit points)
3a. learn about and apply basic rules of video production, using scientific backgrounds and professional TV techniques	**3b. Open Test** Students will find real life examples of aspects of professional TV production (2 credit points).
4a. (s.a.)	**4b. Video Analysis** Students will compare their own initial video production in relation to the learned TV standards (2 credit points).
5a. (s.a.)	**5b. Video Production** Students produce a short education video (4 credit points).
6a. develop an individual assessment of the relevance of video in education for their own work and development	**6b. Essay** Students write a 1,000 word essay on a chosen topic on video use in education (4 credit points).

K. Indicative Readings

Gheorghiu, Ana I., Mitchell J. Callan, and William J. Skylark. 2017. "Facial appearance affects science communication." *Proceedings of the National Academy of Sciences* 114 (23):5970-5975. doi: 10.1073/pnas.1620542114.

Rogerson-Revell, Pamela, Ming Nie, and Alejandro Armellini. 2012. "An Evaluation of the Use of Voice Boards, E-Book Readers and Virtual Worlds in a Postgraduate Distance Learning Applied Linguistics and TESOL Programme." *Open Learning* 27 (2):103-119. doi: 10.1080/02680513.2012.678610.

L. Assessment Mechanism

Level 11 of the Scottish Credit and Qualifications Framework.

M. What makes the course stand out?

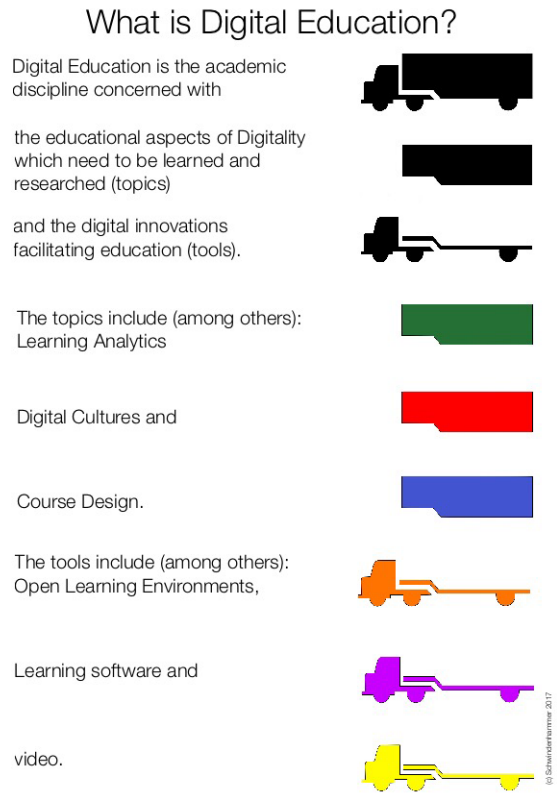
The course offers the pedagogical and psychological background to video in education and also the opportunity to profit from the experience of a senior TV professional. Thus this course combines the intellectual academic sphere with professional video production.

RATIONALE

A. Raison d'être – what should be learned and why

This course is created because of and for the student taking it, who consequently is at the centre of its design. It aims to help the student gain scientifically grounded insights into a growing field of education, enabling the student not only to (a) critically assess the benefits of video use in education and (b) evaluate, whether video can be helpful for their individual approach to education, but also how to use video based on these insights.

For the purposes of this assignment, "Digital Education" refers to (1) digital means for education, asking what should be used how, as well as (2) what should be learned about using these, asking why what should be learned.



In the present course, both aspects form a unit. The aim is to give an overview of the general benefits of video for learning, i.e. „why" should video be used as a digital means of education, and to present concrete techniques for video production for education, i.e. „how" should we produce videos for education.

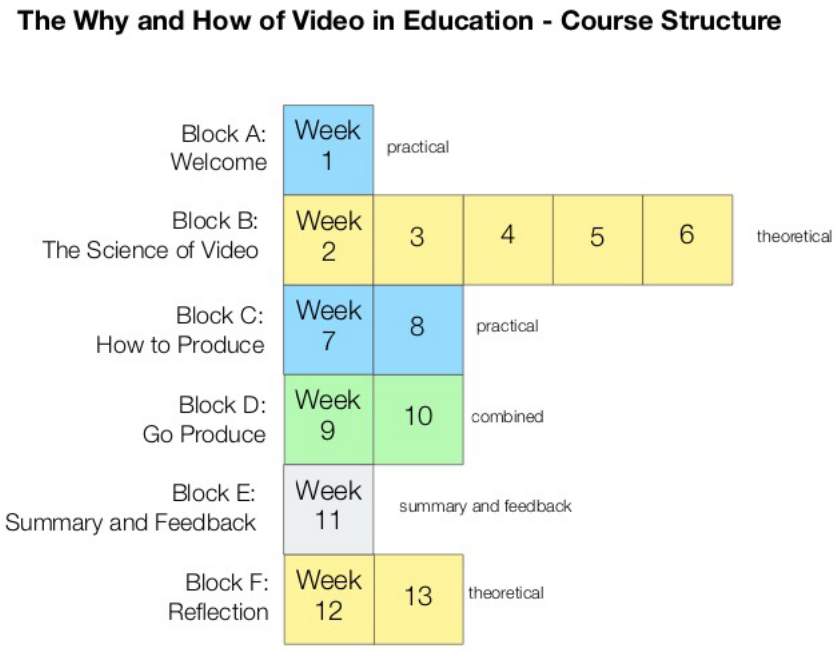
The rapid advances in digital technologies have fostered hopes that multimedia resources „can improve learners understanding of new material" (Mayer, 2011) and that „technology can enhance the learning experience" (Rogerson-Revell, 2015), yet the scientific base to show how and why this actually works is limited and fragmented and needs to be carefully researched (Moreno and Mayer, 2007) and incorporated into pedagogical practice, especially when it comes to applying aspects of professional commercial TV production in educational environments, which are believed to be

capable of providing “more meaningful and engaged learning“ by being able to engage students voluntarily and passionately (Barab et al., 2005, p.15). As Norman pointed out, media professionals know how to engage people and create interest, while educators know which contents should be dealt with (Norman, 1993) and his idea of merging these two fields is the intention of this course by applying published research to concrete TV practices and using both to enable learning in practical meaningful experiences.

B. The Course Design

1. Introduction

TWAHOVIE consists of 13 weeks allocated to 6 blocks, each block building upon the previous one.



Block A introduces the topic of video use and learning with a practical learning experience for the students, who are asked to produce a short video in which they share an experience they had with learning through watching[1]. This account and video production is then put into a personalised theoretical context by the tutor.

Block B introduces various theoretical scientific aspects of video use by having pairs of students learn about individually chosen research in the field. These aspects include among others eye-contact, Multimedia Learning and Teacher Presence.[2]

[1] The term „watching“ is used instead of „observing“, as it describes an activity with low level involvement.

[2] See course part-built for a preliminary list of readings:
https://www.moodle.is.ed.ac.uk/mod/page/view.php?id=44815

Block C helps students understand, how theoretical aspects of video production are used in actual TV productions and how their own initial videos compare to these. For this, students look for real life examples of the learned theoretical aspects.

Block D gives students another chance to produce a video themselves, by asking them to implement what they learned so far.

Block E serves as an opportunity to reflect on the course up to this point and discuss experienced positive and negative aspects.

Block F tries to summarise all the above, by asking students to produce a critical paper on video use in education with a focus on their own work context.

2. Pedagogical Approach(es)

The general rationale is that the course is heterogenous in its individual tasks and topics, just like the students on the course will be heterogenous and that there is no single pedagogical theory or practice which could possibly fit every single scenario. This course will therefore make use of different approaches in the hope and belief, that different scholars have provided valuable research which can be successfully applied in one course, especially as the different theories not only offer different complementary angles to the same scenario, but establish well studied frameworks for concrete design. Consequently the present design is an intentional eclectic and hopefully well informed approach.

a. Constructivism

Before choosing and discussing the individual design principles of this course, we must first be looking at „the underlying assumptions about learning, and then adopt teaching methods that align with those assumptions.“ (Mayes and Freitas, 2013).

The underlying learning theory of this course is constructivism, which is not merely an abstract philosophy stating that learning is an active and individual construction of knowledge by and in the individual (Mayer, 2014), but also means in broad terms and on a neuronal physical level that sensory input creates neural connections inside the human brain, by which knowledge is created by and in the individual. Experiencing and interacting with the world „leads to more connections among neurons“ (Morrison, 2012) and memory or knowledge retention can, in admittedly simple terms, be understood as those connections which survive and strengthen over time through use (Kozma, 1986b). Applying this general working mechanism of cognition to concrete education, we then have to design learning events which trigger desired learnings.

This can be achieved by:
„1. Designing and orchestrating lifelike, enriching, and appropriate experiences for learners.
2. Ensuring that students process experience in such a way as to increase the extraction of meaning“ (Caine, 1994). The course hopes to facilitate this.

We must be aware, however, that this understanding of constructivism explains the working mechanisms of the brain and that the learning which occurs is not necessarily accurate, i.e. a valid mental representation of what we might call facts. Learning is not the discovery of truth, but the creation of knowledge, a knowledge which might be universally true or not, a distinction pointed out by Jervis and Jervis (Jervis and Jervis, 2015) and which demands a general criticality of everybody involved in the course, to develop an individual critical understanding.

II. Learning in three domains

On a more practical level, we can distinguish three types of learning: cognitive (intellectual), affective (emotional), and psychomotor (behavioural) learning (Scaturo, 2012).
With video being both content and (to a large extend) medium, all three learning domains are addressed, as video automatically triggers emotional reactions (as described in the psychological research in the course literature), enables intellectual learning (both types are dealt with in the literature incorporated in the course as listed on the course Moodle platform) and allows for hands-on learning experiences when producing videos.

c. Constructive Alignment

Constructive Alignment is a design framework, aiming to help design an efficient and consistent course in which a „verb in the ILO [intended learning outcome] becomes the common link by which alignment can be achieved between the ILO, the teaching/learning activities, and the assessment tasks“ (Biggs and Tang, 2012).
The present course is constructively aligned using the term „develop“ as the integrative verb, by stating this overarching ILO:

„Develop a critical evaluation of video in education.“

The verb „develop“ is to be understood as an active individual construction of knowledge in a constructivist notion and as an activity involving an intellectual journey which can be understood as self-development. Hence „develop“ can be seen in a framework of Bildung, which itself aims „to strengthen the student's innate powers and character development“ in an infinite process of self-education (Lovlie & Standish 2002).

This also applies to the term „critical“ in the ILO, being both personal and informed. Whatever the students‘ stance: It should be their own and they should be able to argue it.

Students‘ „evaluation“ is expected to address both video as a general tool and as having personal relevance or not.

Every assignment and task is designed to facilitate this ILO, which can be seen in the systematic course structure in the Course Descriptor, which mentions the individual activities and assessment tasks.

d. Elements of Authentic e-Learning

Structurally the constructive alignment of the course is hoping to implement the Elements of Authentic e-Learning as described by Teräs and Herrington (Teräs & Herrington, 2014) in an attempt to broaden the academic foundation on which the course is built:

As the course aims at (prospective) educators with an interest in the use of video in education, it represents an *authentic learning environment* per se through the use of video as one teaching method.
As students repeatedly choose their *„own pathway“* by choosing their own story in week one, their topic of choice for weeks 2-6, examples of video use from their own private lives in weeks 7-8, their individual topic for their own video production in weeks 9-10 and their own topic for the final assignment, the course „ preserves the complexity of the real-life setting“ through „activities that have strong real life relevance“, while allowing for „a sustained period of time for investigation“ with both practical and theoretical tasks as outlined in the general course structure (ibid).
Through the ongoing interaction with the course tutor as well as product exchange (weeks 1, 9 and 10) and discussion (weeks 2-5 and 11) with other students, course participants have „ access to

expert performances“, while gaining „multiple perspectives“ through „ various sources of information“.
Strong *collaborative aspects* including group and tutor reflection are present in weeks 2-6, after which more emphasis is placed on independent student agency in a conscious deviation from Teräs‘ and Herrington‘s theory, to foster the above mentioned notion of Bildung.
Growing student understanding is facilitated by a scaffolding of tasks, which build upon each other, asking students to reflect on and articulate their growing knowledge.
Finally „authentic assessment“ is „seamlessly integrated with activity“ in blocks B, C, D and F (ibid).

e. Design principles by Moreno and Mayer

Additionally the design principles illustrated by Moreno and Mayer (Moreno and Mayer, 2007) will be used in some parts of the course where applicable. This seems useful for this specific course, as video, used and taught, by definition contains both verbal and visual representations of content, which Moreno and Mayer define as a prerequisite for Multimodal Learning Environments. Although this strict definition is not applicable to every detail of TWAHOVIE, the authors‘ design principles for Multimodal Learning Environments nevertheless provide a valid framework to assist in designing a course on video use:
Students interact continuously with the tutor, receiving personalised explanatory feedback on their work at the end of every block, upon which they are requested to reflect themselves, thus enabling them to deepen their understanding and practically apply their learning.
Individual pacing is facilitated by giving students the freedom to choose - within a certain time frame - when to access the learning material (articles, videos, feedback), which itself can be intermittently consumed.
Pre-training is established in the task of week one and in each subsequent task, as each of these function as an increased knowledge and experience base for further course work.

f. Purposeful and active tasks

The general need for study tasks to be **purposeful** (Dewey in (Kolb, 1993)) and active have been shown to apply to the **Communities of Inquiry** (Richardson et al., 2012) and individual **e-tivities** (Rogerson-Revell, 2015) (and as applied in the **five stages model**) (Salmon, 2013)., which therefore must be implemented and designed accordingly and are all used in this course.

g. Community of inquiry (CoI)

„The CoI framework views the online learning experience as a function of the relationship between three elements: social presence, teaching presence, and cognitive presence“ (Richardson et al., 2012).
In this particular course, these elements are thus realised:

I. Social presence

(A) Affective expression is established by sharing personally relevant stories in week one of the course.
(B) Open communication is facilitated by synchronised Skype sessions as well as forum discussions.
(C) Group cohesion is enabled by group work in weeks 2-6.

II. Teaching presence

(A) The instructional design and organisation of the course is made accessible and hopefully relatable to all students even before the course begins.

(B) Discourse is facilitated by an intertwined mix of instructions and application throughout the course.
(C) Direct instruction is an integral part of the course without however claiming to present absolute truths, but the tutor‘s stance which students should learn to examine critically.

III. Cognitive presence through practical inquiry

(A) Week 1 is the triggering event upon which all further course segments are based.
(B) The experiences of week 1 as well as of the following parts of the course are an ongoing exploration of the study matter.
(C) Gained knowledge and viewpoints are integrated into prior knowledge in a continuous process of knowledge building.
(D) A resolution is being formulated in the final essay assignment.

h. Salmon‘s Five-Stage Model

Based on these general guiding principles, week 1 also applies Salmon‘s Five-Stage model (Salmon, 2013), which offers helpful insights and advice regarding course aspects to foster student learning and is thus applied:

I. Access and motivation

Students are welcomed by the course tutor by means of video. Students access the video and hence get used to the Moodle platform and how to access and use it, hopefully being motivated by the personalised welcome message.

II. Online socialization

Students are asked to produce individual videos in which they should talk about a personal episode in which they learned something from watching someone or something. As students share their experiences, the group gets to know each other, they socialise online.

III. Information exchange

By means of their videos as well as by the tutor’s following feedback, information about individual stories is exchanged and framed by scientific research offered by the course tutor.

IV. Knowledge construction

By discussing in a live Skype chat how the videos made them learn about the other course participants, about different scenarios and instances of learning through watching and about the potential benefits and difficulties having used video as a technical tool in education for all this, they construct knowledge in what could be labelled a community of inquiry.

V. Development

Thus they develop, hopefully, the confidence to pursue on this quest together with everyone else on the course.

Throughout these five stages, the activity and interactivity of the students increases, from merely watching to producing to discussing.

i. The power of stories

By asking students to recall and tell a story of their lives, the task of this week also uses the unique qualities of stories in a learning context.

„Stories are important cognitive events, for they encapsulate, into one compact package, information, knowledge, context, and emotion“ (Norman, 1993), all of which we not only convey to those who hear our story, but also to ourselves, as we speak (ibid, p.128).Or as Herman and Schank

puts it: "Thinking depends very much on storytelling and story understanding“ (Herman and Schank, 1996).

j. Further design criteria

The above mentioned design aspects of the course aim to provide an understanding of the core design principles. Other aspects of the course design shall only briefly be mentioned here with regard to the word count limit of this paper.

I. The Course provides opportunities for theoretical and practical work as well as evaluation, hoping to create a rhythmic variety, which should help students gain, retain and regain motivation.
II. It also uses diverse forms of social interactions, addressing the needs of both extrovert and introvert students (Jung and Kahlert, 2004).
III. Throughout the course, personalised messages are used to enhance student engagement and learning (Moreno and Mayer, 2004).
IV. The course integrates aspects of vicarious learning, i.e. learning by observing others learn as a practical implementation of an established benefit of learning through video (Bruning et al., 1999).
V. Kolb‘s learning cycle is applied in the micro and macro structure of the course, by having student‘s active experimentation lead to concrete experience lead to reflective observation lead to abstract conceptualisation lead to active experimentation a.s.f. (Kolb, 1993).
VI. Students have chances to experience the difference in watching live and recorded video.
VII. Various modes of communication are applied, i.e. written text, video sharing, video conferencing, synchronous and asynchronous communication.
VIII. The course tutor provides feedback to maintain high levels of motivation (Chetwynd and Dobbyn, 2011), (Rogerson-Revell, 2015).
IX. E-tivities, i.e. "purposeful online tasks" (Rogerson-Revell, 2015), which Salmon defined as “frameworks for enhancing active and participative online learning by individuals and groups“ are used throughout the course (Salmon, 2013).

3. References

BARAB, S., ARICI, A. & JACKSON, C. 2005. Eat Your Vegetables and Do Your Homework: A Design-Based Investigation of Enjoyment and Meaning in Learning. *Educational Technology,* January-February**,** 16-21.

BIGGS, J. & TANG, C. 2012. Aligning the Curriculum to Promote Learning. *Encyclopaedia of the Sciences of Learning,* 26**,** 198-199.

BRUNING, R. H., SCHRAW, G. J. & RONNING, R. R. 1999. *Cognitive psychology and instruction,* Merrill, Upper Saddle River, NJ.

CAINE, R. N. 1994. *Making connections : teaching and the human brain,* Wokingham, Longman.

CHETWYND, F. & DOBBYN, C. 2011. Assessment, Feedback and Marking Guides in Distance Education. *Open Learning,* 26**,** 67-78.

GHEORGHIU, A. I., CALLAN, M. J. & SKYLARK, W. J. 2017. Facial appearance affects science communication. *Proceedings of the National Academy of Sciences,* 114**,** 5970-5975.

HERMAN, D. & SCHANK, R. C. 1996. Tell Me a Story: A New Look at Real and Artificial Memory. *SubStance,* 25**,** 140.

JERVIS, L. M. & JERVIS, L. 2015. What is the Constructivism in Constructive Alignment? *BioScience Education,* 6**,** 1-14.

JUNG, C. & KAHLERT, J. 2004. *Psychological Types*.

KOLB, D. 1993. The process of experiential learning. *In:* THORPE, M., EDWARDS, R. & HANSON, A. P. (eds.) *Culture and processes of adult learning : a reader.* London: London : Routledge in association with the Open University.

LOVLIE, L. & STANDISH, P. 2002. Introduction: Bildung and the idea of a liberal education. *Journal of the Philosophy of Education pp,* 36**,** 317-340.

MAYER, R. E. 2011. Multimedia Learning. Oxford University Press.

MAYER, R. E. 2014. *The Cambridge handbook of multimedia learning*, New York : Cambridge University Press.

MAYES, T. & FREITAS, S. D. 2013. Learning and e-learning - The role of theory. *In:* BEETHAM, H. & SHARPE, R. (eds.) *Rethinking Pedagogy for a Digital Age.* Routledge.

MORENO, R. & MAYER, R. 2007. Interactive Multimodal Learning Environments. *Educational Psychology Review,* 19**,** 309-326.

MORENO, R. & MAYER, R. E. 2004. Personalized Messages That Promote Science Learning in Virtual Environments. *Journal of Educational Psychology,* 96**,** 165-173.

MORRISON, J. 2012. *Brain Facts* [Online]. Washington: Society for Neuroscience. Available: http://www.brainfacts.org/the-brain-facts-book [Accessed 10/12/2017].

NORMAN, D. A. 1993. Things that make us smart : defending human attributes in the age of the machine*,* Reading, Mass., Addison-Wesley Pub. Co.

RICHARDSON, J., ARBAUGH, B., CLEVELAND-INNES, M., ICE, P., SWAN, K. & GARRISON, R. 2012. Using the Community of Inquiry Framework to Inform Effective Instructional Design. *In:* MOLLER, L. & HUETT, J. (eds.) *The Next Generation of Distance Education.* Online: Springer.

ROGERSON-REVELL, P. 2015. Constructively Aligning Technologies with Learning and Assessment in a Distance Education Master's Programme. *Distance Education,* 36**,** 129-147.

ROGERSON-REVELL, P., NIE, M. & ARMELLINI, A. 2012. An Evaluation of the Use of Voice Boards, E-Book Readers and Virtual Worlds in a Postgraduate Distance Learning Applied Linguistics and TESOL Programme. *Open Learning,* 27**,** 103-119.

SALMON, G. 2013. E-tivities the key to active online learning*,* New York, New York : Routledge.

SCATURO, D. J. 2012. A Tripartite Learning Conzeptualization of Psychtherapy. *In:* SEEL, N. M. (ed.) *Encyclopedia of the sciences of learning.* Place of publication not identified]: Place of publication not identified : Springer.

TERÄS, H. & HERRINGTON, J. 2014. Neither the Frying Pan nor the Fire: In Search of a Balanced Authentic e-Learning Design through an Educational Design Research Process. *International Review of Research in Open and Distance Learning,* 15**,** 232-253.