iLRN Conference: Transactional Webinar Design

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Introduction

During the time of the 2020 Coronavirus, there was an unprecedented increase in web video conferencing for professional and academic use (Business Insider 2020). From the trial-and-error approach used by many organisations, it has become apparent that guidelines for conducting webinars are needed. What are the protocols that can inform webinar design? A theoretical foundation is needed to provide a clear plan forward in the research and development of webinar interaction. This paper puts forward a 'transactional webinar design'. A starting proposition for any webinar event is for the stakeholders to recognise the nature and degree of self-directedness. In doing so, we are working towards autonomous, self-managed webinar participants and stakeholders. The narrative of this paper moves through a series of questions. First, WHAT are the key factors of a successful webinar? Next, HOW can we blend the tools with the interactive/transactional design? Lastly, WHY would we choose this webinar model?

When engaging in an argument, a starting common language is needed. What do we mean by 'transactional'? Dewey (1949) explains 'transaction' in an education context, as the individual's pattern of behaviour in an environment. The webinar virtual 2D space is addressed in this paper. According to Moore (1997) the separation of [stakeholders] is sufficiently significant that special [engagement] strategies and techniques are needed.

This webinar analysis begins by looking at WHAT elements comprise a successful event and the related evaluation criteria. This section starts with the technical components and moves to examine the stakeholder's profiles. When hosting or attending a webinar, is there a clear model of the expectations of the participants? Is there an inherent expectation for the interactions to be identical to a face-to-face discussion, classroom lecture, seminar debate, role-play enactment, or unstructured brainstorming? This expectation needs to be explicit so there is a criteria to measure success. In this way, there is a benchmark to form the 'transactional webinar design'.

WHAT Webinar Components Affect Learning?

Some general technical elements most webinar systems include are:

- Sound
- Video
- Live text discussion
- Screen share
- Recording
- Survey

The audio component is arguably the most important part of a webinar communication. Each webinar platform will have an 'audio set-up wizard' or speaker/microphone test to confirm the sound levels. This essential check must be done well before the live event to avoid the

‘can-you-hear-me’ problems. Use a headset (earphones and microphone) to avoid audio feedback or echo.

Video takes up bandwidth, so decide if seeing the speaker or the audience adds value to the event. A still image of the speaker in the corner of the PowerPoint slides as an alternative to the live ‘talking-head’ may suffice. Remember, only one channel of audio/sound can be transmitted at a time. It is recommended that the audience is set on mute audio and video at the start of the session. Text chat, therefore, becomes a powerful tool for audience engagement. Explain before the event on the invitation webinar registration or email invitation the Q&A (Question & Answer) protocols. Will questions be addressed during the session or only at the end? The text chat discussion can be copied and pasted into the event FAQ (frequently asked questions) resource page.

Screen sharing is a powerful tool to allow participants to see a presentation or a live software application in use. However, this feature demands bandwidth. A pre-recorded video may be a better option. If the audience can download the file to view locally on their device it frees up Wifi connection.

Recording webinars is becoming an expected service for anyone wanting to review the session or who missed the live webcast. In a business meeting a summary of the action points can be recorded as action points for the next agenda. Auto-transcription tools, such as Microsoft Stream, produce voice-to-text artefacts (Stream 2020). Screen capture is not the only recording that can be done. The presenter may do an ‘over the shoulder’ recording of the webinar.

The ‘meta-film technique’ (Basiel & Howarth 2016?) can be used to produce another recording resource from outside the 2D screen capture perspective. Webinar participants can be encouraged to use smartphones to record themselves during the event. These recordings can be used for self-reflection or self-assessment purposes.

Surveys and quizzes are valuable to capture feedback from webinar participants. Many webinar platforms include this feature, but external tools, such as Google or Microsoft forms, can be added as a weblink. Collecting data will provide evidence to support webinar design improvements to meet the needs of the participant profiles. Additionally, this research provides a Webinar Profile Toolkit resource to aid webinar stakeholders develop their designs.

Who are the key actors in a webinar? Most web video conferencing events may include:

- Host
- Presenter
- Live Text Facilitator
- Participants: a) Individual b) Small or Large Groups

The webinar host owns the account on the software cloud platform. This may be in any of the current popular systems such as Microsoft Skype in Teams, Zoom, WebEx, Adobe Connect, Google Hangouts, GoToMeeting, Amazon Chime, etc. Two-way communication is supported as opposed to one-way live webcast seen in YouTube or other live streaming services. The host holds technical control of the webinar space setting the access to unmute microphones and video. In some systems, such as Adobe Connect, the screen layout can be adapted for location of the presenter’s video slides or text chat. In a lecture-style webinar the

Presenter speaks while showing PowerPoint slides. Experienced webinar Presenters can engage the audience by pacing the delivery of text/graphic content with opportunities to respond to questions via text chat or polling tools. The webinar Facilitator is perhaps the most important role by linking the Presenter and audience. The Learning and Skills Group (LSG 2019) of London, UK facilitated by Don Taylor demonstrates a good balance of content delivery with audience contribution.

In this discussion of the key webinar players, it is understood that each actor is in a remote location. However, the audience can fall into three categories: a) individuals b) small groups on location c) large groups on location. For individuals, their log in would show their 'Guest' name. It is recommended to include another identifier such as the business or organisation or location. When presenting to groups, a local facilitator is helpful. This person would sit at the keyboard and act as the moderator or spokesperson for the group. Face-to-face questions for the Presenter would be directed to the Facilitator, so that only their image/voice/text appears to the webinar screen. When dealing with multiple languages, the Facilitator should be fluent in the language of the Presenter.

How can webinars be designed with transactional distance in mind?

Next, we address the question of HOW can we blend the tools to promote interaction/transactional design? The technology must not drive the pedagogy, Thorp (1998) reminds us. For the context of this research the blend of the webinar instructional design can be mapped in a matrix linked to the level of transactional distance (range of structure and dialogue) towards the learner becoming more autonomous.

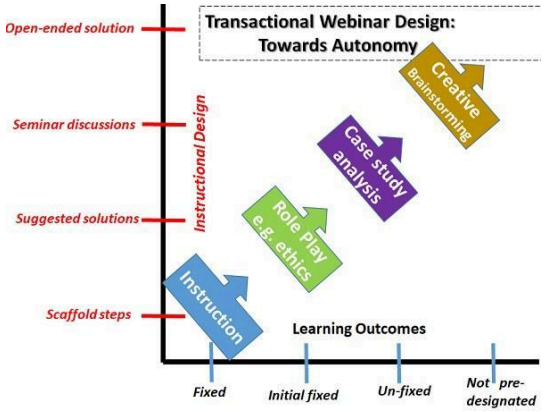

Figure 1 Webinar Design Spectrum

For an instructional design a 'talking head' PowerPoint presentation with Q&A at the end, followed by an online quiz is appropriate. In this webinar, short-term recall is required for a specified conclusion. For example, to train staff on using a fire extinguisher correctly there would be specific steps to follow. In a role play webinar, the Presenter and Facilitator would provide audience members with a script to read, acting out a real-world situation. A recording of the event may portrait an initial fixed outcome with students discussing possible alternatives as a follow-up activity. Suggested solutions can also be given by the Tutor. In small group discussions the Presenter and Facilitator can create breakout rooms to send participants away to virtual rooms to analyse a case study. Each group may reach a different conclusion (or un-fixed learning outcome) based upon their tacit and prior knowledge

between the team members. Recordings of the final results can be reviewed after hearing all of the solutions. The case study resource may have a sample resolution, but more than one answer could address the factors under consideration. Negotiating with the team members and presenting recommendations supported by evidence in the webinar summary develops virtual communication skills needed for virtual teams. Finally, one area that webinar design can be developed to promote autonomous learning is in scenarios where there is no fixed denouement. The problem addressed is unfamiliar to the webinar participants which requires a creative brainstorming approach to the discussion. The webinar design needs to provide a setting that allows the team members to gain an understanding of each other's perspective. Each contribution to the argument leads to an innovative recipe of ideas and actions. Klaxoon (2020), a French webinar software company, has an interaction model to foster smart teamwork. The sequence starts with a vote by team members on the project problem or research question. Through this first stage exchange, profiles of the group are established to identify any skill or knowledge gaps. Next, a brainstorming session provides contribution opportunities towards a resolution. Finally, a survey is done to gather evidence to justify the application of the learning outputs of the webinar. All of these webinar models use a 2D interface to communicate real-life 3D audio/video data. But, as Marshall McLuhan (1967), has highlighted, 'the medium is the message'. We are not limited by this level of technology in our webinar design.

The 360* Immersive Fishbowl Webinar Design

A next-generation webinar design based on the Socratic discussion (or fishbowl) model is being piloted in relation to this paper by the authors (Basiel et al. 2020).

One possible solution towards immersive webinars is to develop a hybrid model of current 2D webinar technology and 360* web video used in conjunction with mobile smartphones. This blended technology could support a 'Socratic fishbowl' discussion learning design. DATL (2019) sees the ultimate goal of the Socratic method is to increase understanding through inquiry. Obtaining an enhanced freedom to think through discarding pre-existing bad ideas is the penultimate objective of the classic Socratic method. The only person who cannot think, is the one who thinks they already know all the answers. Through the deconstruction of existing ideas, the classic style of the Socratic method frees people to think about basic principles and ideas with an enhanced sense of necessity and clarity.

The starting proposition of the webinar learning model states that there is no point in getting deeply into complicated theories of particular applications of a concept until one can answer a much simpler question. The classic Socratic method functions to tear down existing ideas of the concept. This works by exposing unknown or unacknowledged ambiguity and complexity, which makes the webinar respondent realise they have more thinking to do. The 'Socratic Effect' provides the webinar participant with the opportunity to rethink the idea after having their previously existing understanding discarded with their full agreement on the basis of their own answers to questions. The 'unconference' (2019) fishbowl discussion can promote the 'Socratic Effect' which is outlined in the figure below.

This immersive blended learning model is knitting together 360* video, mobile smartphone video conferencing, a local digital video camera, voice-to-text software for auto-transcription and a webinar host platform. The face-to-face 'fishbowl discussion' has a small central group of Local Experts [LE] sitting in an inner (red) circle with a Live Host [LH] using their mobile phone as a video camera/microphone to interview the Experts. The Host swaps the video

camera from viewing themselves, when acting as Master of Ceremony, to showing the Expert speaking.

A ‘Meta-Film’ approach (Basiel and Howarth 2017) sees the ‘unconference’ inner-and-outer circle actors [LA] using their mobile phones to record events from their perspective. These videos can be shared in social media platforms to promote the conference and develop an online community of learners.

In the centre of the circle there are two capture devices:

1. 360* video camera <3D-R>– This device records the introduction first, before the live event. Next, the fishbowl discussion is recorded.
2. Omni mic <OM> – This device is used for two outputs. First, it is the main audio input for the Live Camera Man [LCM] who produces the main screen of the event. Additionally, the audio is fed into a live voice-to-text transcription <V2T>. That text is used to create a tag cloud summary graphic of the transcript. Text captured from the event can be used as the database for an AI chatterbot dynamic FAQ resource.

The event Live Facilitator [LF] is a key player in the model. They sit in the inner circle and act as moderator for the Host and remote audience virtual [VA] members. This interaction is mediated silently, at first, by live text chat [LTC] discussion. As the Live Facilitator finds questions to add to the discussion, they give the VA member video access and turn off their [LF] self-video.

The projector screen layout diagram (in the bottom left corner) suggests how the event may look online to the virtual audience [VA] and projected at the live event on a big screen so the face-to-face actors can see the video of the entire group.

The event can use the interactive webinar elements previously discussed such as whiteboard mind maps, voting, surveys, polling, etc. This promotes evaluation of the event success. Next iterations of the 360* fishbowl model includes the use of video drones (2020) and replacing the inner-circle people with a 360* monitors model (2020) when it is not possible to meet in person such as self-isolation during the Coronavirus in 2020.

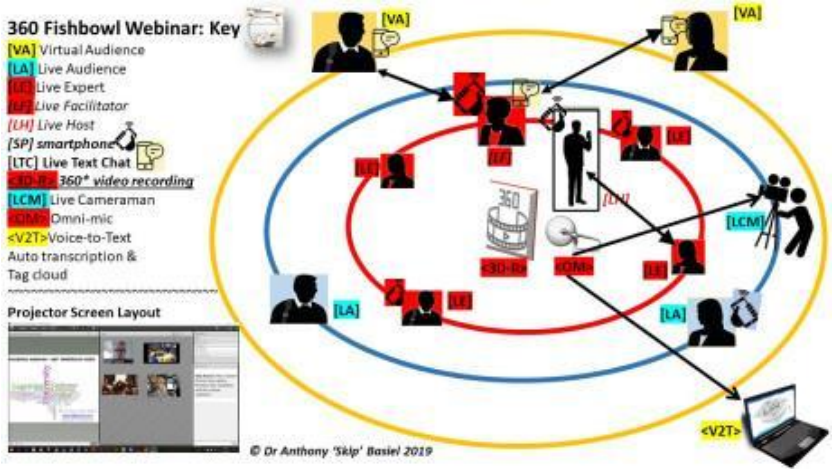

Figure 2 the 360 Immersive Fishbowl Webinar Design*

A weakness of this open discussion model is that it can become chaotic. The Live Host/Local Facilitator can juggle the flow of the interactions, but the larger the audience the more difficult it is to choreograph the webinar event. Let us look at a physics principle called

entropy[1] *(2020)* to guide us through the webinar mayhem. Simply put any system will tend towards disorder, rather than a systematic structure. For example, if I have a container with 20 game dice that I throw across the table, the grouping patterns will be random, not tidy. The probability of the dice forming a pyramid is very low. Instead, there may be no evident pattern. Some of the dice may cluster together, while others are isolated. '*Learning entropy*' in a webinar is manifested by the unstructured nature of brainstorming. The creative process can be steered by the Host/Presenter through the technical features of the webinar such as limiting participant video and audio transmission. Questions and comments can be redirected into the live text chat, but that too can become chaotic in mass volume.

Is there a way to funnel the interactions of the webinar without forcing too much control from the event organisers?

A fishbone or Ishikawa diagram (2020) offers a way to conduct a *cause and effect analysis* for a brainstorming session. Cause and Effect Analysis gives you a useful way of doing this. This diagram-based technique combines brainstorming with mind mapping to consider all possible causes of a problem, rather than just the obvious ones. According to Mindtools.com (2020), *'When you have a serious problem, it's important to explore all of the things that could cause it, before you start to think about a solution. Then, you can solve the problem completely, first time round, rather than just addressing part of it and having the problem run on and on.'* A fishbone diagram can:

- Discover the root cause of a problem,
- Uncover bottlenecks in your processes,
- Identify where and why a process isn't working.

Step 1: Identify the problem.
This may use a Soft Systems Methodology technique (SSM) from Checkland (2012) called CATWOE where you look at the problem from the perspective of Customers, Actors in the process, the Transformation process, the overall World view, the process Owner, and Environmental constraints.

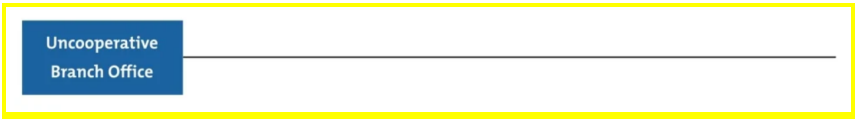

Figure 3 Fishbone Diagram - Identify the problem Mindtools.com

Step 2: List major factors

Next, identify the factors that may be part of the problem. These may be systems, equipment, materials, external forces, people involved with the problem, and so on.

[1] https://www.quora.com/What-is-entropy-4

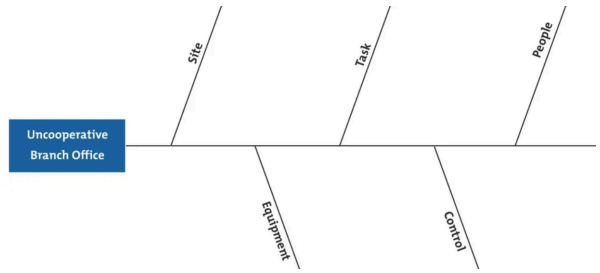

Figure 4 Step 2 Fishbone diagram - Major Factors

Step 3: Possible causes

Now, for each of the factors you considered in step 2, brainstorm possible causes of the problem related to the factor.

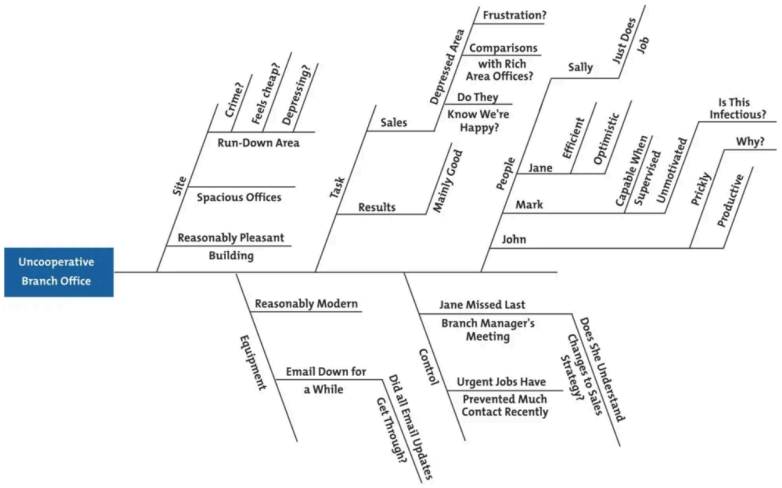

Figure 5 Step 3: Possible causes.

Step 4: Analyse the problem

Analysis may involve setting up investigations, carrying out online surveys, web video conference interviews. These techniques test which of these possible causes is actually contributing to the problem and provide evidence to inform action. In the context of the Transactional Webinar Design, analysis may take place during one event or over a series of webinars.

In the example presented in the figures above the manager may have assumed that people in the branch office were "being difficult." Instead, he thinks that the best approach is to arrange a meeting with the Branch Manager. This would allow him to brief the manager fully on the new strategy, and talk through any problems that she may be experiencing.

Why Transactional Distance Theory?

The final question addressed in this paper is WHY would we want a webinar model informed by Moore's Transactional Distance Theory (1997)? Stepping back in time to the 1960s there are two dominant pedagogical traditions. Perhaps most of your webinar experiences have fallen into a Behaviourist webinar model. In this online learning event the webinar audience is taken through a linear, systematic path of instruction based upon behavioural objectives.

There is maximum Tutor/Presenter control of the resources, timing of the content delivery, media types used and opportunities for audience participation. Knowledge in this webinar design is a product metaphor. The webinar participant will exit with mastery of a new skill or ability to recall short-term information. That knowledge is linked to a measurable learning outcome through a standard assessment such as a written essay or presentation. The Behaviourist webinar model focuses on the deliverable and not the process.

Conversely, the Humanistic Tradition found its roots in the counselling and education psychology knowledge domains. Special value was placed in a less formal or unstructured learning model. The value of interpersonal, open-ended dialogue fell into this pedagogy. A brainstorming setting doesn't have a pre-determined or fixed learning outcome. This creative webinar space produces a bottom-up, learner-generated content experience with personalised learning outcomes. The ownership of the learning journey is with the students with the Tutor/Facilitator as choreographer.

Once the webinar participant has acquired a new skill, understood a new concept or mind mapped a path to an innovation or discovery, the next stage the webinar design should provide is the opportunity to apply that capability. The webinar or series of online events has the potential to bring this virtual community to action in the real world.

What are the key components of transactional distance?

According to Moore (1997), '*to deliver effective teaching programmes that overcome transactional distance, we need appropriate media for each teaching process.'* Programme structure and learning dialogue form the foundation of the transactional architecture for a webinar.

This research provides a software toolkit to apply these webinar factors to create a Webinar Profile (2020). A set of ten transactional factors are rated from your perspective as a webinar Host/Presenter or Participant. The next figures provide a summary of the analysis.

Structure

ITEM DESCRIPTION	Value	2	1	0
1) Pre-event description	2.0	*No webinar description given.*	*Basic webinar induction*	*Multimedia induction provided.*
2) Intro: Tutor welcome text	1.5	*No welcome provided.*	*General welcome provided.*	*Multimedia welcome provided.*
3) Context: Aim(s), LOs, background given	1.0	*No aim(s), LOs, background given.*	*Some aim(s), LOs, background given.*	*Detailed aim(s), LOs, background given.*
4) Foundation information	0.5	*No information given.*	*Basic information given.*	*Detailed information given.*
5) Formative Assessment - mastery level	0.0	*No mastery demonstrated.*	*Some mastery demonstrated.*	*High level of mastery demonstrated.*
6) Application of knowledge	0.5	*No opportunity to use info.*	*Some opportunity to use info.*	*Ample opportunity to use info.*
7) Syntheisis: new knowledge combinations	1.0	*No synthesis.*	*Some synthesis.*	*Ample synthesis.*
8) Prediction: Evidence-based next stage	1.5	*No Prediction*	*Some Prediction.*	*Ample Prediction*
9) Structured post-activity	2.0	*No activity*	*Some activity*	*Ample activity*
10) Evaluation Survey	2	*No survey*	*Basic likert scale*	*Survey to inform FAQ resources.*
TOTAL:	12.0			
AVERAGE:	1.2			

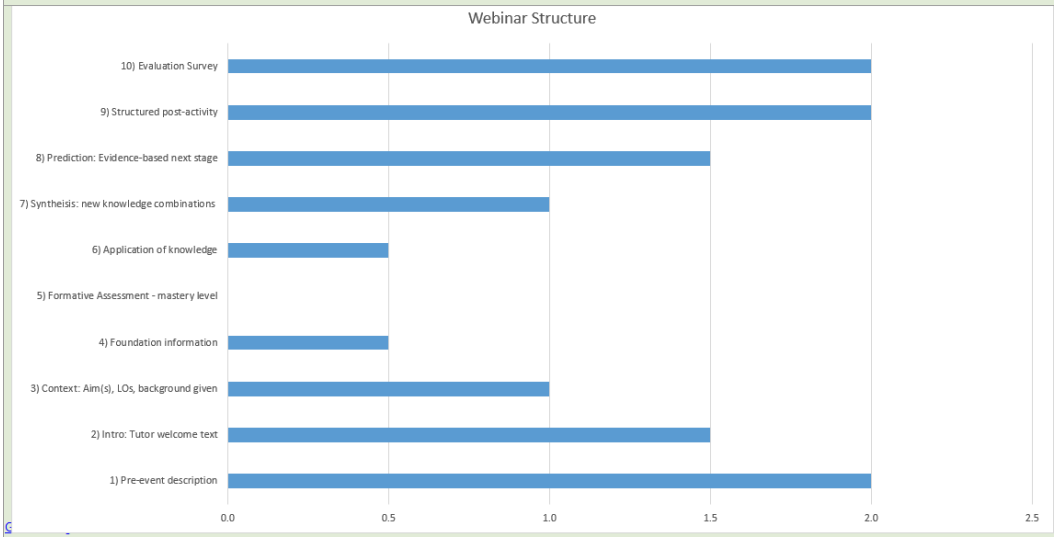

Figure 6Webinar Profile Toolkit - Structure

Dialogue

ITEM DESCRIPTION	Value	2	1	0
1) Pre-event discourse	1.0	*No Pre-event discourse*	*Basic Pre-event discourse*	*Multimedia Pre-event discourse.*
2) Intro: Participant welcome text	1.0	*No participant welcome provided.*	*General participant welcome provided.*	*Multimedia participant welcome provided.*
3) Team Profile Psychometrics	1.0	*No participant profile.*	*Some participant profile data.*	*Detailed participant profile.*
4) Participant tacit & prior knowledge	1.0	*No information given.*	*Basic information given.*	*Detailed information given.*
5) Peer review discussion	1.0	*No peer review.*	*Some peer review.*	*High level of peer review demonstrated.*
6) Group analysis negotiated.	1.0	*No Group analysis negotiated.*	*Some Group analysis negotiated.*	*Ample Group analysis negotiated.*
7) Syntheisis: brainstorming	1.0	*No brainstorming .*	*Some brainstorming*	*Ample brainstorming*
8) Prediction: Creative mind map	1.0	*No Creative mind map discussion*	*Some Creative mind map discussion*	*Ample Creative mind map discussion*
9) Post event virtual community	1.0	*No follow-up community building*	*Some follow-up community building*	*Ample follow-up community building*
10) Evaluation open-ended survey	1.0	*No open-ended survey*	*Basic open-ended survey*	*Survey to inform FAQ resources.*
TOTAL:	10.0			
AVERAGE:	1.0			

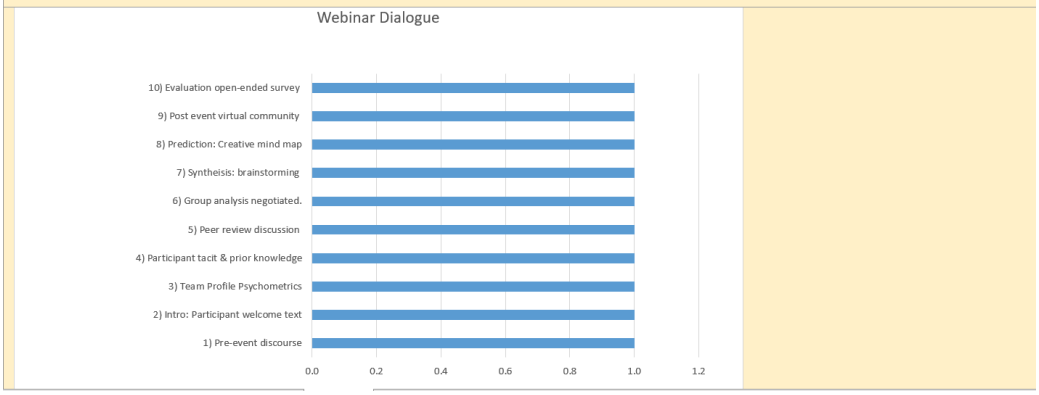

Figure 7Webinar Profile Toolkit – Dialogue

The first measure is if the webinar has a pre-event resource (induction) or discussion. Next, is there an introduction of the Host/Presenter and Participants offering context to the webinar event? Are the stakeholders given appropriate resources or opportunities to create their own? Is any formative, self-assessment or reflection built into the webinar? Are the webinar participants given the opportunity to analyse, evaluate or create? At the end of the event, is evaluation data collected and analysed? There needs to be a strategy to constantly review the webinar design and systems used to match the profile needs of the stakeholders.

Evaluation

The final element to consider in the Transactional Webinar design is evaluation. This should not be done as an afterthought. An online survey to quantitative and open-ended feedback needs to be built into the webinar design from the start to provide ‘feedforward’ evidence. Each webinar event can use built-in polling tools and/or external systems to capture audience profile information. Some useful data may include participant:

- Demographics e.g. geographic location, occupation, native language, webinar technology expertise, etc.
- Expectations e.g. personal learning outcomes matched against the intended learning objectives
- Human-Computer Interaction e.g. usability of the system

Web video recordings of the events can provide auto-transcriptions, text discussion exchange and whiteboard mind mapping evidence to support any modifications proposed to the webinar design.

Conclusion

This paper investigated three questions in relation to webinar design:

1. WHAT are the key factors of a successful webinar?
2. HOW can we blend the tools with the interactive/transactional design?
3. WHY would we choose this webinar model?

For a variety of learning environments, Moore (1997) suggests that distance learning requires changes in the traditional role of teachers to be able to select media for (webinar) instruction. This paper has shown these key issues:

- Successful webinars require technical and pedagogic blending depending on the profile of the stakeholders,
- The degree of learner autonomy is related to the instructional design,
- The next-generation of webinar design may move from the current 2D (outside-looking-in) view to include a 3D immersive (inside-looking-out) perspective,
- Webinar pedagogy can provide learning opportunities from traditional Behaviourist instructional design to Humanists creative brainstorming,
- One approach to addressing 'learning entropy' in a large Socratic webinar discussion can be to use techniques such as a fishbone diagram,
- The Transactional Webinar Profile Toolkit (2020), provided in this research, gives the reader software to apply Moore's Transactional Distance Theory to a real-world webinar event,
- Ongoing evaluation needs to be part of the webinar design.

By building a virtual learning community researching webinar design, we can progress towards the next-generation pedagogies and technology blends presented in this paper. The authors challenge readers to contact them to provide case study feedback on the results of using the Transactional Webinar Profile Toolkit and webinar learning theory offered. Through the analysis of the case study examples tends to inform the future designs of webinars. The authors predict a paradigm shift to more creative brainstorming webinars in the near future to promote autonomous learners.

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