



Faculty of Education & Innovation

Teaching, Learning & Technology

**Facilitating language teaching in  
a hybrid classroom over three  
locations via streaming video on  
a first year bachelor course**  
Research Report

**Zac Woolfitt, Pieter Swager**

March 2019

# Contents

<b>Summary</b>	<b>3</b>
<b>1. Introduction</b>	<b>5</b>
1.1 Introduction and background	5
1.2 Subject, goal and question formulation	5
1.3 Relevance and delineation	6
1.4 Parameters, limitations and perspectives	6
<b>2. Theoretical framework</b>	<b>6</b>
2.3 Conclusions and implications	7
<b>3. Methodology</b>	<b>8</b>
3.1 Type of research	8
3.2 Participants, research questions and research instruments	8
3.3 Procedures for data collection and data analysis	9
3.4 Validity and reliability	9
3.5 Ethical issues	10
<b>4. Results</b>	<b>10</b>
4.1 Sub Question 1	10
4.2 Sub Question 2	13
4.3 Sub Question 3	14
4.4 Sub Question 4	17
4.5 Sub Question 5	18
<b>5 Conclusion, discussion, recommendations</b>	<b>20</b>
5.1 Conclusion	20
5.2 Discussion	21
5.3 Recommendations	22
<b>6. Critical reflection</b>	<b>23</b>
<b>Bibliography and sources</b>	<b>24</b>
<b>Appendix – TPACK model &amp; coding</b>	<b>26</b>
<b>Excerpt from Interview 1 - Team Manager</b>	<b>27</b>
<b>Excerpt from Interview 2 - Video Technician</b>	<b>28</b>
<b>Excerpt from Interview 3 - Language Teacher</b>	<b>29</b>
<b>Excerpt Interview 4 - three students / location A</b>	<b>30</b>
<b>Excerpt Interview 5 - two students / location B</b>	<b>31</b>
<b>Excerpt Interview 6 - one student / location C</b>	<b>32</b>

## Summary

On a four-year bachelor course at Inholland University of Applied Sciences in the Netherlands, additional modern language was offered to first-year students studying at three locations. In July 2017, a total of 21 students enrolled across the three locations to study this modern language. Since each location only had a few students and there was only one language teacher available, across the three locations, the management team proposed a solution. Lessons would be given by the teacher in a 'hybrid' classrooms. The teacher was at one location with some students while students from the other two locations would join via live video link.

The language course was developed and designed by the language teacher in conjunction with the video technician to find solutions for the technical set-up and in consultation with the management team.

The focus was to develop speaking and listening skills through in-classroom discussion that took place via the video link. Short video news segments in the language were watched live in class. This led to discussion and practicing the language. Learning support materials were available in the form of a grammar book with an online self-test learning environment.

The research group TLT conducted research on this original and creative solution to teaching smaller groups since much could be learned from a practical, didactic and organisational perspective. This report describes the delivery of the language course during the first semester from September 2017 to January 2018. Once the course started, 12 of the original 21 students stopped following the course. A total of 9 students from three locations completed the course.

At the end of the course (June 2018), a total of six interviews were held; one each with the manager, the video technician and the teacher, and six of the nine students were interviewed, at the three locations. The interviews examined the role played by pedagogical, content and technological knowledge, issues regarding the organisation, and the perceived experience of students on the course. The interviews were transcribed and member checked, and then coded using the TPACK model and an open coding approach. This led to a set of key themes that emerged.

Several organisational issues influenced the course. There was financial pressure to find a viable solution. Sufficient vision and creativity were needed to propose the video solution. Appropriate technology expertise and support to make it happen had to be present. The possibilities and limitations of the technical solution were tested to their full. Having adequate technical support at each location to solve technical issues during the class time. Having adequate availability and being able to schedule the special video classrooms is important. There were challenges regarding ambient noise outside the room and distracting noises in the classrooms. It is important to set realistic expectations and to communicate the type of education to students in advance and explain what it is like to study in the hybrid classroom.

The technical system being used needs to be fully tested in advance. It should be sufficient to fulfil the needs of the course. All technical issues need to be resolved at an early stage in order to keep the focus on the learning process.

From a pedagogical perspective, this case supported findings from the literature that it is complicated to engage with students live in a classroom while also communicating with students at other locations via a video screen. This creates split attention and additional cognitive load for both the students and the teacher, putting extra pressure on concentration and communication during the class. Students also stated the importance of creating the sense of a unified class. There were additional classroom management issues for the teacher since it is hard to actually see what is really going on at the other location and what focus there is. Giving lessons in the hybrid classroom involves developing a specific approach to teaching in this context.

Students from the three locations reported that they did not feel like one class. Speaking a new foreign language over a video link to unfamiliar students felt awkward and placed additional load on their learning

process. Students also experienced a different interaction with the teacher when they were in the classroom, or via the video screen. Both teacher and students felt it was easier to stay focused when student and teacher were physically present in the classroom.

Several content specific factors relating to the specific nature of language teaching were relevant in this context. The students had a broad range of language level when they started. Understanding a spoken foreign language via a video link puts extra pressure on the learning process. Students agreed that using the video news segments was a very suitable way to learn the 'real' spoken language. When teaching a language in a hybrid classroom, decisions have to be made regarding which skills will be developed (oral, listening, writing, or reading). Implementing a language class in the hybrid format is particularly challenging. This involves several complicating factors such as differences in the student language level and their motivation, the quality of the audio between locations and the communal trust between students at the online classroom.

Recommendations to management include establishing success criteria, a full and complete budget and cost analysis, sufficient support in the form of educational experts with experience in this format, clear communication with students about the type of class and what is needed to learn in this context, awareness of split attention and cognitive load, and the importance of having 'equal' facilities at all locations. From an organisational and technical perspective, test and check the hardware and software in advance and ensure timetabling of classrooms is done well in advance. From a teaching perspective, the course should be fully planned a year in advance to allow for the technical issues to be sorted out. The teacher should invest time in creating a sense of class community and carefully select which parts of the language are best suited to being taught in this format. Time in class should be allocated to discussing 'how to learn and study' in the hybrid classroom format.

Finally, while technology offers many opportunities, it may be more complicated and difficult to implement them in the real world learning environment that it may appear at first. Discussing and reaching a clear understanding of these complexities in advance is essential before teaching in a hybrid classroom across multiple locations.

# 1. Introduction

## 1.1 Introduction and background

At Inholland University of Applied Sciences in the Netherlands, the bachelor course being researched is based at three locations; Diemen, Haarlem and Rotterdam. Since 2010 the teaching team has started to use various video formats to support the teaching and learning process. This has been in the form of lecturers using web lectures to record lecture content that can be accessed by students (Woolfitt, 2014), or when a teacher was unwell and pre-recorded content for students. Staff at all three locations have started integrating videoed content of their teaching, including implementing forms of blended learning (Griffioen, 2016; Woolfitt, 2017).

The four year course includes a standard package for the first two years where student have to study one modern foreign language. As of study year 2017-2018, first-year students were given the option to choose a different second modern foreign language. In July 2017, a total of 21 students enrolled across the three locations to study this other language. Based on the small group size across three locations, the availability of the language teacher at only one location, timetabling and travelling times between locations, the management team considered the option of providing these classes via a hybrid format (synchronous face-to-face and online). This research presents the hybrid delivery of the language course during the first semester (September 2017 to January 2018). How was this implemented? How was it experienced by students and staff? What can be learned regarding organisation, technology, pedagogy and teaching language in this format? What choices were made and how can this format be developed in future iterations? Interviews were held with students at all three locations, the language lecturer, a member of the management team and a member of the video support staff. Recommendations and suggestions are made regarding what was learned, what worked, and aspects to consider in future iterations.

## 1.2 Subject, goal and question formulation

In July 2017, based on the number of students enrolled, the management team discussed with the Video Support department the idea of delivering a language course via synchronous online and face-to-face option. The existing facilities and software would be used (round-table video conference rooms and the video programme Skype for Business). The classes would take place with the teacher at one location with the students from that location in attendance face-to-face, while the students from the other two locations would participate from their location through a video link. Different definitions are in use for this mixed format of teaching including blended, flipped, inverted and hybrid (Margulieux, McCracken, & Catrambone, 2016). This report uses the term Hybrid Classroom to describe a classroom in which a lecturer is teaching students face-to-face (who are physically present in the classroom) while also synchronously teaching students online via a video link (who are not physically present in the classroom).

### Objective

To gain insight into how organisational, pedagogical, technical, and content specific factors contribute to delivering a language course taught in a hybrid classroom format, in order to make recommendations regarding delivering learning in the hybrid classroom.

### Research question

How do organisational, pedagogical, technical, and content specific factors contribute to delivering a language course taught in a hybrid classroom format?

Contribute: refers to having an impact or influence (either positive or negative).

## 1.3 Relevance and delineation

### Practical Relevance

This research has practical relevance for both the course and for Inholland across its 9 locations. It examines the technical, pedagogical and content knowledge necessary for setting up and delivering synchronous online, streamed lessons over several locations. The potential to teach synchronously online, via streamed video, with students at multiple locations is of great practical relevance to Inholland regarding the current developments regarding ‘flexibilising’ of education (Fransen, 2015).

### Social Relevance

This research is relevant for other educational organisations exploring online teaching to multiple locations synchronously. Establishing guidelines and approaches to this can contribute to society as a whole for those considering finding ways to make education more accessible and flexible to wider segments of society within the context of life-long learning.

## 1.4 Parameters, limitations and perspectives

### Delineation

The research took place at three locations on the first year course during the first semester (periods 1 & 2) of the academic year 2017-2018.

## 2. Theoretical framework

According to Bower, Kenney, Dalgarno, Lee, & Kennedy (2013), ‘blended synchronous learning involves using rich-media technologies to enable remote and face-to-face students to jointly participate in the same live class’. In their examination of seven different case studies they identified two key challenges teachers face; communication and cognitive overload caused by split attention. Due to the variety of terms to describe mixed online classes, there is often a lack of clarity on specific definitions. In an effort to provide clarity on this, a taxonomy is proposed by Margulieux et al. (2016) in which the dimensions of instructional location, delivery medium, instruction type and synchronicity are used to classify the terms flipped, blended, inverted and hybrid learning.

‘The taxonomy is a tool to classify the design of a course based on the percentage of instructional support that students receive while receiving content or applying content and on the percentage of support that is delivered via an instructor or technology.’ (p. 111). This taxonomy can be used to map the different learning activities and delivery methods in the course.

Linder (2017) states that in hybrid classroom settings ‘face-to-face activities are often combined with technology-mediated activities so that there is more active learning in the face-to-face setting as well as more intentional guidance when students are learning outside the classroom.’ Linder states that in a hybrid course the teacher needs to shift pedagogy (teaching methods for children) to apply andragogical principles (teaching methods for adult learners). This is due to the increased need for students to be independent and to learn autonomously. In addition, teachers may experience a significant increase in course preparation time due to the need to match face-to-face with online instruction activities in a constructively aligned approach.

Keim (2015) analysed the student response to a hybrid language class in which the focus was practicing speaking the language. Keim concludes that the combination of face-to-face and online teaching ‘should be not too open but not too restrictive as well as not too optional but not too compulsory.’ And that ‘tools used should be aligned with learning needs as well as communicative goals.’

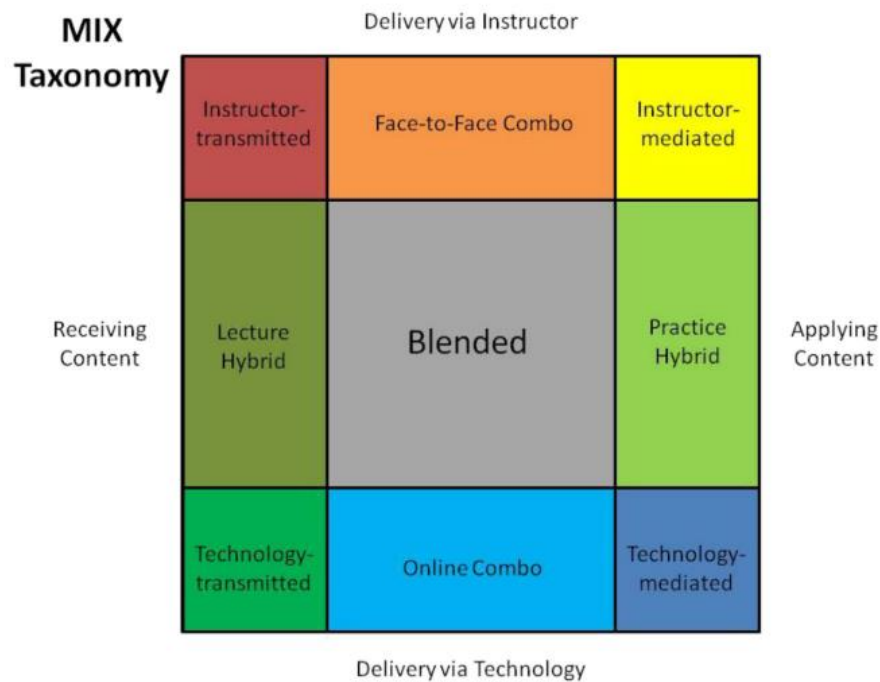


Figure 1: The Mixed Instructional experience (MIX) Taxonomy provides terminology to consistently categorize mixed instruction course (Margulieux et al., 2016).

### Technological, Pedagogical and Content Knowledge model (TPACK)

The TPACK model (Mishra & Koehler, 2006) integrates the separate domains of content and pedagogical knowledge, with that of technological knowledge within an organisational context. The point where technological, pedagogical and content knowledge overlap is ‘the basis of good teaching with technology [...] which requires a thoughtful interweaving’ of the three types of knowledge (Mishra & Koehler, 2006). In a literature review of 55 documents on the TPACK model regarding the theoretical basis and the practical use of TPACK, it was concluded that getting teachers to be actively involved in the design of lessons that incorporate technology can have a positive effect (Voogt, Fisser, Pareja Roblin, Tondeur, & van Braak, 2013).

## 2.3 Conclusions and implications

The MIX taxonomy will be used to place the course learning format from the perspective of delivery (teacher or technology) and content (applying and receiving). The TPACK framework will inform the research subjects by focusing on organisational, technological, pedagogical and content specific factors.

### 3. Methodology

This section describes the research method selected, the participants and the reasons for the selected research tools.

#### 3.1 Type of research

This small-scale research project combines descriptive and evaluative data within the context of a specific case in which the course design with technology was pre-determined. Secondary data was collected in the form of literature to provide a theoretical context for the research. Qualitative data was collected via six semi-structured interviews with respondents. This research is also exploratory since it is examining a new format of teaching in a new educational context.

#### 3.2 Participants, research questions and research instruments

The participants in the research were the students on the course at three locations (A, B & C), the course lecturer, a member of the technical video support staff and a line manager from the management team from one of the locations.

Research Participants
A line manager (manager)
A member of the technical IT support team (video-technician)
The course lecturer (teacher)
6 students on the course; at least one from each of the three locations: A, B & C

#### Research questions

The following sub questions were formulated to answer the main research question:

**How do organisational, pedagogical, technical, and content specific factors contribute to delivering a language course taught in a hybrid classroom format?**

**Sub question 1:** What organisational factors need to be considered when facilitating a hybrid classroom?

**Sub question 2:** What technical factors need to be considered when facilitating a hybrid classroom?

**Sub question 3:** What pedagogical factors need to be considered when teaching in a hybrid classroom?

**Sub question 4:** What content specific factors regarding teaching a language need to be considered when teaching in a hybrid classroom?

**Sub question 5:** What was the perceived experience of students when learning in this hybrid classroom?

Organisational factors refers to both Inholland as an organisation, as well as the logistical planning and organisation of this hybrid classroom.

Technical factors relate to the relevant hardware, software and support needed to deliver this hybrid classroom.

Pedagogical factors are the specific teaching skills needed to teach in the hybrid classroom.

Content specific factors relate to language teaching in the context of the hybrid classroom.

Perceived experience relates to the students' perception of how they experienced the teaching and learning in the context of this hybrid classroom on this specific course.



## Literature review and theoretical context

The literature is 'what is already known, and written down, relevant to' the research project (Robson, 2011) and there should be systematic approach to identify relevant sources containing information on this subject. In this context, sources relating to 'video teaching' from the Inholland Research Group 'Teaching, Learning and Technology' were accessed in addition to a search of the Inholland academic data base based on hybrid classroom.

## Semi-Structured Interviews

Six semi structured interviews were used to collect qualitative data. A semi-structured interview is an interview in which 'the interviewer commences with a set of interview themes but is prepared to vary the order in which questions are asked and to ask new questions in the context of the research question' (Saunders, Lewis, & Thornhill, 2016). This format provides the interviewer with a 'shopping list of topics' with 'considerable freedom in the sequencing of questions, in their exact wording, and in the amount of time and attention given to different topics' (Robson, 2011). Robson states this format is appropriate when 'the interviewer is closely involved with the research process (e.g. in a small-scale project when the researcher is also the interviewer)'. This data collection method was selected in this small-scale project (nine respondents) and with the researcher as the interviewer. Interviews were conducted with an interview guide and checklist of key subjects. Respondents were informed they were free to decline to be interviewed with no explanation needed and that they would have the opportunity to check the summary of the interview in a written format before it was finalised. Four semi-structured interviews were with individuals and two of the student interviews were conducted in groups (with two students and three students).

## 3.3 Procedures for data collection and data analysis

An interview protocol was written that explained the guidelines and reasons of the research, anonymity, and ethical issues. Each interview was recorded on audio, and then listened to by the researcher. The interviews were then transcribed in a summarised format. Each summary was then sent to the interviewees for a member check to ensure that the translated and summarised version correctly captured the intended meaning of the interview. Comments and additions were then included in a final version of each summary included in the appendix.

The summaries of the interviews were read by the researcher and then analysed using open coding (Boeije, 2012; Corbin & Strauss, 2008). Data was first grouped into categories based on the TPACK model; organisation, technology, pedagogy and content knowledge. The open coding generated a list of 76 codes. Axial coding was used to clarify and describe the codes; 'axial coding is a set of procedure whereby data are put back together in new ways of open coding, making connections between categories' (Strauss & Corbin, 1998, quoted in Boeije, 2012). Each segment of text was linked to one or more of the codes and then the number of occurrences for each code were counted. Those codes that appeared the most were then analysed further by collecting the key text and extracting and then summarising key ideas from it (see appendix for sample of coded interviews). This analysed data is presented in the results and used to answer the sub questions and main question. The draft research report was sent to the manager, video technician and teacher. Their comments and edits were incorporated into the final report.

## 3.4 Validity and reliability

Validity can be defined as 'The degree to which what is observed or measured is the same as what was purported to be observed or measured' (Robson, 2011) which can be referred to as the 'truth status' of the report. All research instruments, including the data and final report were critically reviewed before use by members of the research team with the intention of ensuring reasonable validity.

Reliability can be defined as ‘The extent to which a measuring device, or a research project, would produce the same results if used on different occasions with the same object of study’. This process is considered more difficult in flexible design research, or some may regard it in appropriate (Robson, 2011). Feedback and input throughout the process was provided by the research team who critically examined reliability of the research instruments and is discussed further in the critical reflection.

### 3.5 Ethical issues

The Dutch association of Hogescholen (Vereniging Hogescholen) established protocol guidelines for research (HBO Raad, 2007) and Andriessen, Onstenk, Delnooz, Smeijsters, & Peij (2010) provide a code of conduct for research at the HBO level which will be adhered to during the research process. This involves a focus on the following five areas: professional/social relevance, respectful, careful, honourable, and accountable for choices and conduct. Pijlman et al (2017) provide 19 quality criteria (section 5, page 31). In addition, steps outlined by Fullan (2007) were considered including ethical guidelines, ethical issues, researcher safety and risk, general ethical responsibilities, and the politics of real world research. The ethical and political issues discussed by Robson (2011) were also taken into consideration including addressing ethical codes and guidelines and avoiding questionable practices. The researcher in this report had a double role as a lecturer in the educational team which was considered when evaluating the neutrality and impartiality of the research (Robson, 2004; Seidman, 2006). The three ethical issues identified by Fransen (2013b) permission, privacy and risk versus return, and the four issues related to standards: practicality, feasibility, care/integrity, and accuracy of conclusions were integrated into the research process. Because of the small number of staff and students involved in the research, the decision was made to anonymise all names and locations to keep the final report neutral in tone.

#### Language considerations: English and Dutch

Two languages were involved in the collection of the research data, Dutch and English. Although the research findings are presented in English, for most respondents, Dutch is their native language. 3 interviews were conducted in Dutch and three in English. To ensure that any potential language misunderstandings were minimised during the research process, guidelines based on Seidman (2006), concerning linguistic differences and finding the right words in English, were taken into consideration in the translation and summarising process. The group discussions and surveys were held in a mixture of English and Dutch. All summaries were written in English and member checked to ensure consistency of intended meaning of interview content.

## 4. Results

### 4.1 Sub Question 1

**What organisational factors need to be considered when facilitating a hybrid classroom?**

When developing a new educational approach, in this case teaching a language through a hybrid classroom over three locations, many organisational aspects are relevant to ensure success. And different reasons are driving the innovation.

## **Financial context**

Financial reasons were the first organisational factor mentioned for driving the implementation of the hybrid classroom. This was due to the small number of students over three locations that made it impractical to have three teachers. The choice was made to pay for one teacher at one location. 'It has something to do with the small number of students and the desire to carry it out at three locations. Primarily there was a financial reason for this' (manager). While costs were reduced on the teaching hours, additional resources were required from support staff which often involved support staff at all three locations being available to set up the technology, and additional work before each lesson to test the equipment with the teacher; 'It was in a start-up phase, lots of unknowns, all the extra staff who were there to see if it went well' (manager)

## **Vision and space**

A clear educational vision is needed including an understanding of how the language course fits into the longer term educational goals. In addition, room to experiment and space was mentioned as being important in this context. 'You can only learn that by experimenting. As recommendation, for teachers, give them sufficient space to experiment' (video-technician). 'You have to think through the educational concept. The pedagogical concept. Really important to think about it' (teacher).

## **Support department (service desk and video technician)**

The support of the video technician and the service desk was mentioned as important; 'the service team, based on their resources, they did a great job. You can rely on that group. Video technician always available. If that had not gone smoothly, it would have been a whole other story' (manager). 'The teacher was already in the classroom an hour earlier, along with a member of staff from the service desk, and with the video technician, the three of them were sitting there working on it. Testing it, do the films work. [...] At each location you need local support, which can be different per situation' (video-technician). Someone from the service desk 'always logged in for the group. It was done for us. Someone could have explained it to us, but instead they came and did it for us' (teacher). 'The service organisation is very 'lean and mean' and cooperated with us. They deserve a gold star! The technical video support looked at it, if we can give a gold star somewhere, then it is to those guys. They got it all together' (manager). In addition, the video technician provided an additional training to the teacher on how students could upload the video files in Office 365.

## **Logistical issues over three locations**

The course took place over three locations which poses challenges for timetabling the class to be available at the same time. In addition, the importance of an 'equal' setting at all three locations was mentioned by both staff and management. Equal means having identical facilities at each location as well as similar classroom configurations. The interactive conference rooms at each three locations are usually only available for staff meetings and are not listed in the scheduling system as being available for teaching students. Since these classrooms did not appear in the schedule maker's overview of available classrooms, the process of reserving these special rooms did not go smoothly. Using them for 'teaching' was not in the mind-set of the organisation and required extra steps before these facilities could be booked for another use, and could be linked to the students schedules. New education requires new classroom formats and flexibility in how it is booked, along with the layout of the classroom and technical facilities itself; 'it is the same for 'Scrumming'. You may need computers around the walls of the classroom, and space in the middle, to work in groups. Then we all understand the concept of how the room should be organised. Then we ask the service desk, which rooms are that size..? So we set it up' (Manager). In addition, at the start of the course the class location was not showing in some student timetables; 'in the lesson schedule it said when the class was, but not where it was' (manager).

## **Enthusiasm and openness for educational change**

All three staff interviewed expressed a positive perspective regarding experimenting with educational change; 'the team leader was enthusiastic to try, and motivated to try this sort of thing in the future. I was

enthusiastic because we were thinking along the same lines [...] I liked the idea of learning how to do this in a different way' (teacher) and 'I was enthusiastic' (video-technician), 'I had the most drive to carry this out' (manager). Staff mentioned that as education changes it is important to change with the times; 'For the future, these types of lesson formats are inevitable, in relation to the normal lessons, digitalisation is developing so quickly, we just need to be ready for it' (manager). The language programme had to be developed quickly and there was limited time for the lecturer to develop the programme 'But it was too short notice. Saying this in hindsight. Something to be done differently [...] It was all too much in a rush' (teacher).

### **Communication to students, and between locations**

The first-year students said that when they enrolled on the course, they had selected to study this specific language. However, they were unaware in advance that the lessons would be via a hybrid face-to-face/online classroom over three locations. Students were only informed of this when the class started (in two locations, that was informed via the video link); 'If you are going to develop something new, then you need to have communication with all parties and it needs to be well communicated. And we did organise it. But all retrospectively' (manager). Early on, several students left the course to join another language course where they described lessons as 'normal'. The students said they were not informed in advance regarding the type of class they had or the format; students 'kept going on about it. We were not told this was going on. And in the first class even, students left 'I don't want to do this' (teacher). 'They were completely surprised. They found out on the first day that it would be organised this way. And then there was no turning back. And because they were new [first-year students, first week], they were very surprised' (manager).

Staff described the course as a pilot and an experiment; 'it was supposed to be a pilot or a project, but it was not treated as one. So it was not supposed to fail' (teacher) and 'the students could see from the very beginning that it was a sort of 'pilot programme' (manager). 'Inform students very clearly about this, we'll help you here in this manner, then it can work well. Expectation management' (manager). Management at one location kept open communication with the students; 'I talked with them every now and again. I thought, I need to keep open communication with them. If it was running in this disjointed manner. So I had talks with them' (manager). An additional factor was the language of communication in the course. There were students studying the course in Dutch and also international students studying the course in English. This meant emails were sent in English only which added an additional level of complexity to the communication process for the Dutch students; 'We are following our course in Dutch. This is Dutch education. That caused some additional difficulty in the beginning to understand it' (student). In addition, the manager mentioned the importance of setting accurate and clear expectations with students 'What will happen, what is expected from me? How will the exams work?' (manager).

### **Staff with adequate online teaching experience**

There was limited availability of expertise in the organisation regarding teaching online. In addition there were logistical issues regarding obtaining a teacher with the relevant language skills. The language teacher was available for period 1, 2 and 4 of the academic year (taking a sabbatical in period 3). This required a replacement teacher to be found for the third period which also led to some additional disruption. 'A teacher available the whole year, clearly inform the participants what will happen, those are the most important issues that I think students had difficulties with' (manager). The teacher explained that there was learning on the job and some improvisation; 'For me it was really an experiment. I developed a regular language course/module. But it was an exploratory path. I had to find out what did work and what not, or what I felt uncomfortable with, creating awareness of it while doing' (teacher).

### **Experimental space to try things out**

All three staff interviewed expressed the importance of having space within the organisation to experiment with the pedagogical and technical possibilities. 'You can only learn that by experimenting. As recommendation, for teachers, give them sufficient space to experiment' (technician). The teacher said 'It was my personal and individual learning process. Honestly, in hindsight, I was not prepared. I was

determined to make it work through creativity and "stepping" out of the box. But it's more complicated than this, you require to re-think language education in this physical environment. All three staff mentioned the importance of having adequate educational support for the development and delivery of the programme, 'And then you need to think about that. You can solve some things through web lectures. But you need to examine the whole thing from the perspective of an educational expert' (manager).

Overall, organisational issues were related to factors for change. These included financial, a culture of experimentation, having sufficient educational vision, and sufficient support for both the technical, pedagogical and content specific knowledge.

## 4.2 Sub Question 2

### What technical factors need to be considered when facilitating a hybrid classroom?

Teaching a hybrid language course synchronously over three locations has a heavy requirement on technical equipment and facilities working. All those interviewed expressed mixed views on the degree to which this was achieved. Having appropriate designated learning spaces (classrooms) available with the right equipment that works is a fundamental requirement.

#### **Software and hardware**

The round-table conference rooms and video conference software were already installed at all three locations and were in use; 'That was already there. That's why we used the conference rooms and Skype for Business is the standard software on all equipment' (video-technician). In this case, pre-existing facilities were employed for the hybrid classroom. Setting up a programme in this format goes through a certain learning curve and in the second period many of the technical issues were resolved. From a technical position, staff and students mentioned the importance of having equal facilities at each location. When these were not the same it led to students feeling they were not being treated equally.

#### **Ambient noise and audio quality**

There is a challenge in getting the right balance between clear audio and muting disturbing background noise; 'At one location, there was lots of external building work, lots of noise. Then a leaf blower came by the conference room, very disturbing' (video-technician).

Or we say something here, but there is lots of noise at the other location. That happens much less in a lesson. You have to be quiet. If you don't understand it you can't ask the person next to you, and then you have to ask the teacher, and then everyone is involved. It does not happen so smoothly, it's more chaotic. You hear the other noises at the other locations. For example, if a door closes at [another] location, everyone hears that noise. So if you talk a little bit it causes noise for everyone (student).

The technical issues of being able to hear the other participants and the teacher was very important; 'Having clear audio [...] with other locations but hard to hear, or difficult to understand. Then you were struggling to hear what teacher said, or to understand it' (student). 'The teacher was sometimes difficult to follow via Skype. Sometimes it was just not clear what the message or subject was' (student). The manager raised the issue that students may think; 'So if this is the new form of education, why do I need to come to school? That is a very valid question. If you want to make it successful, you need to ensure that the technology really serves them' (manager).

The technical environment made it difficult to have seamless real-time interaction across all three locations and to give instant audio feedback;

It was challenging to give instant audio feedback, it would add additional sound, and it would pause the class even more, disruptive as well, example: Two students talking at different locations A and B and I am at location C. If I coach or comment on pronunciation, this (the students talking with each other) is an

additional piece of noise in the system that disrupts communication. Yes, it would slow down the communication (teacher).

### **Did the technology work?**

There was a mixed response as to the degree to which the technology worked. After some start up challenges in period 1, period 2 worked more smoothly. The initial intention was to synchronously stream video (news segments) live over three locations via Skype for Business. But this was not possible (technical and audio). However, communication via the 'chat' function did work. The teacher said that the challenges came more from the desired approach to the technology, the way it was intended to be used, rather than the affordances of the technology itself. But if the technology does not work well, then it has no added value and actually interferes with the learning. There were issues with microphones and audio not working, films not streaming, which made communication difficult at the start; 'You could not hear what was being said. In one location an answer was given but it had to be repeated five times before it could be heard in the other location. We had to keep asking for information to be said again' (student). In the first lesson at one location the 'technology did not work at all. The camera was over there but no one could see us and we could not hear any one, no one could understand us and you had to lean into the microphone on the table. That was the most chaos I think' (student).

'In the end actually the technical aspects worked well. Someone came along from IT who understood it. At the end of the first semester the technical aspects worked' (student) although another student said the overall technology issues were not resolved and that 'the technology part has to be fixed properly [...] Basically it all depends on the technology part. Because that is where it actually goes wrong. But if technology is not working then there is nothing the teacher can do about it. In addition, 'when the technology part is not working no matter what the teacher does it is still not going to be enough for the students' (student).

## **4.3 Sub Question 3**

### **What pedagogical factors need to be considered when teaching in a hybrid classroom?**

The teacher mentioned that in the hybrid classroom 'the pedagogical content has to be entirely different compared to any physical lessons' and this was experienced during the course. The teacher explained that some things cannot be done in a digital environment. 'I think that teaching in a digital way, this way, requires a totally different approach to teaching. It has nothing to do with regular teaching. What is the added value of being in this environment for language teaching? (teacher). The teacher also considered the difference of teaching online individually (teacher). 'in this physical environment with these parameters: students in class together with the teacher AND student groups at 2 different additional locations requires an entirely different approach to teaching which I was not prepared for. The insight into this I found out by doing'' (teacher). It would have been an advantage to have studied and learned from "good practices" at other Universities in advance of the pilot. The technician mentioned that the 'Possibilities that technology offers need to be known, beforehand, what it can and can't do. And then base your didactic and pedagogical approach on that. But teachers often don't know the possibilities, or the limitations' (video-technician).

### **Sense of class community (online)**

Both the teacher and students mentioned issues regarding a sense of 'class unity'. In order to introduce themselves to the other classmates, each student was asked to make a short video introduction in the language being studied which was shared online as the first exercise and then viewed by students outside of class. Several students mentioned that on this course, they did not have the same feeling of being part of one class, as they do with their normal face-to-face class. The teacher said 'I was aware of the entire

three groups not feeling like one class. But on the other hand I did not think it was so important.’ When asked about the group feeling in the class, the teacher said:

*I was aware of the fact that this was not happening because they would never see each other, only on screen. The set up was that students would not see each other face-to-face. Therefore, the fact that students would not have the “one class” feeling came with the package. I did not consciously do anything about it. I developed the exercises, the dialogues they had to prepare in groups/pairs across locations, which did not always work. I was experimenting, trying to get them to work together across locations.*

As first year students starting a new course, some students expressed their thoughts on class unity:

*As a student at the beginning, you don’t know each other. If you are a little insecure about your (language) accent. Then you have to say a whole sentence in (language) and then you can understand that you don’t dare to say it really loud. Then you get to know your own class members a bit, you travel with them in the train. But then there are other students at the other locations and you only meet them one time for the exam. You still don’t know them. You know their name but that is it.*

Students mentioned the need to feel confident speaking to classmates ‘online’ and having the trust of the whole group:

*It felt a little bit uncomfortable the whole time. You don’t feel so comfortable, if you’ve written a summary of one of the films, you don’t feel comfortable enough to share that [...] Or another student laughs because you have incorrect pronunciation. Then you don’t want to say anything else. One student laughs because you did not say it correctly. And then you think, oh forget it. [...] At the other locations if you say something wrong then the students at the other location laughs at you. Then you think why bother.*

This is a different learning context than being in your ‘regular’ class face-to-face with students you know:

*When you have your own class it is different. The classmates are your regular classmates. You see them often and feel comfortable with them. It is more frustrating if you don’t know someone. We are all here trying to learn. If I say something wrong and I don’t know you then I would not expect you to laugh at me. You are pulling me down. Demotivating me, to be able to be active and speaking and correct myself. [...] But if I see you on the video, after the class I don’t know you. So I don’t have a lot from [the online students], compared to my own classmates*

There were also issues regarding the availability outside of class, of students at the other locations:

*Contact to make with someone at another location? You are here with your work and project. They are busy with their project and regarding planning it is difficult. To make time for this. That would be difficult. [...] Since you do not know the student you are working with, and you have not had contact with them in the class in person. This should be considered for next time.*

Only seeing students for 90 minutes on Skype, limited the chance to get to know them, and to build trust. One student said it ‘feels like you are doing stuff on your own.’

## **First Year Students**

The course was run for first year students and there were differences in their level of (study) maturity, their academic and cultural background, their starting language level, their age, and their confidence in the higher education context; ‘The others would start to become impatient. Because they are first-years, they behave like secondary school pupils, finding everything “crazy” or awkward, giggle a lot, are insecure. It all comes through the system. First year students are not the suitable target group for such an experiment’ (teacher). The teacher also mentioned that in other international courses at Inholland, the teacher approaches students as mature individuals on an HBO course ‘serious students who choose to study here, pay a high tuition fee. It was not the case for this group. I don’t think the group experience is very important’ (teacher). The teacher mentioned that the external context of the students and the level of their (digital) study skills needs to be taken into consideration when setting up a course with a more complicated, less traditional learning format:



*First year students they are exploring, not only the language, but everything else in their lives. I think this was too big a challenge. For 3rd or 4th year students (maybe second year) yes. 3rd Year students would be fine with the environment, would see the purpose (the first year students did not see the purpose). [3rd year students] have the calm, can see the bigger picture, they would cooperate more and would see the fun of it. Hey, I can learn something here (teacher).*

There were general aspects of the course that were affected by the maturity level of some of the students:

*'Insecurity, they hear themselves at other locations, are possibly ashamed' (teacher). Other issues the teacher raised regarding the level of study experience of the students was that not all students took the initiative to order the book from the publisher. There was quite a lot of insecurity in some students who paused when speaking which lead to impatience from other students and students were not always prepared for class. The course required self-discipline and homework preparation. However, not all students prepared and students said they felt they could get away with not being prepared 'I hadn't prepared the questions, it did not matter. Someone else gave an answer' (student). One student mentioned the benefit of good preparation; 'The course text book itself was helpful, if you work on your own, a few times' (student).*

### **Patience, focus and distraction**

The online environment placed additional pressure on the students in order to concentrate; 'The contact is not so valuable due to the lack of concentration (the other students were there but may have been on their mobile phone)' (student). Technical issues meant that there were sometimes delays in the class; 'there is not much patience to wait for the others while this uploads' (student). One student explained it was extra challenging to focus and concentrate on several online presentations from students at other locations.

### **Subject specialist and online teacher**

It was considered a challenge for management to find a teacher with the combination of relevant language expert, who also had experience of teaching in an online environment. In addition, the teacher has to be competent with online teaching and a well-structured course; 'You should have had a thought through, educated and researched method tailor-made for this environment.' (teacher).

### **Face-to-face vs. online**

Much of the interview discussion with the teacher and students focused on the difference between a regular face-to-face class and an online class. Students mentioned a preference for the teacher being there in person which makes correction of mistakes easier. It also affects issues of classroom control, such as difficulties to get control of students giggling online; 'This is different to being in a class where there is more oversight from the teacher' (student). One student mentioned that because the teacher was not physically there, that they were 'less active during the lesson' or that they felt 'less motivated'. When studying in a hybrid classroom, it is particularly important to have a high level of concentration and focus in the class.

*For the future, ensure that students are motivated for the course and they pay attention. Not sitting chatting. 2-3 of them talking makes it difficult. The motivation is definitely important for the course to be a success. Not talking during the lesson, be quiet. That is very important for lessons via Skype. For the flow of the lesson, make sure something gets done, being quiet, not chit chat, then at another location when it was noisy, the sound fell away here or there (student).*

One student said they thought 'in a sense, it would have been easier to have been in a classroom and just watch the documentary. And that I think is a bit strange, if you want to use all this additional material' (student). The manager who attended some classes observed that the students were more 'dynamic' when the teacher was physically present than online and that when there was no visibility of the online students due to technical issues, the teacher was not able to interact with them. The technician mentioned that the teaching and technology have to be completely integrated and can't be separated and that an ideal situation, equal attention and focus needs to be given to every student.



The teacher mentioned that when in the same physical space of the students, the teacher could be ‘a moving target’ by walking around which kept the students focused, and could ‘push’ the students to answer. Having eye-contact with students was also very important ‘For keeping students connected to what we are doing, it is important to see the person who is talking. Because that makes you connect, although you are not in the location, The view is important’ (teacher). Students mentioned that the teacher could not know what students online were doing during the class, or control them when they were not paying attention. Students also mentioned they could get quicker contact with the student when in class, whether asking questions or feedback when practising the language. Also, it is difficult to get the teacher’s attention to ask a question when they are online ‘you can’t just stick your hand up’ (student).

### **Creating a dynamic and engaging (hybrid) classroom**

The teacher outlined efforts made to create interaction between students and to have a dynamic and interactive class. This included an out of class assignment in which students were paired with students from other locations. In spite of the 24/7 connectedness of today’s students and availability of free communication tools such as WhatsApp, scheduling issues and prioritising of learning tasks made it challenging for students to connect individually with students at other locations. Students commented that the teacher made an effort to involve all students by asking questions to all involved on a section of the video just viewed. Some students said that working with students at other locations was ‘awkward’ and they did not feel comfortable with this format.

## **4.4 Sub Question 4**

**What content specific factors regarding teaching a language need to be considered when teaching in a hybrid classroom?**

Following a class online requires additional concentration, but when that class is in a different language, that can provide an additional challenge for the learning; ‘And it was all in another language (of course). That makes it more difficult to follow’ (student).

### **Starting language level of students**

The teacher and students commented on the difference in the level of language between students, and the overall level.

*‘Not sure that the book was the right level to learn for us to learn more. Seemed more like level of HAVO2 than HAVO 3. You have to develop your HAVO 5 level. First it was informed you must have the HAVO 5 level (language). It turned out everyone had that level on paper but in reality, some had a better level than others’ (student)*

### **Course design, book and learning materials**

The course was designed at short notice, over the summer, by the teacher. Since there was no established programme in that language, the teacher searched for and found a book that had online exercises and based the course on that content. The focus was to use video clips from news programmes and to watch and then discuss these during class. The teacher used their experience to design a suitable course which required substantial extra hours of both preparation and course design under a short time frame. In hindsight the teacher commented that there is already a large amount of course material available for free online, under informal websites. This material could have been used but the teacher was not sure that this informal content would have been accepted by the management team or the exam board. The teacher also reflected that showing videos and teaching via a hybrid format requires a different teaching approach and poses a number of challenges that are additional to a standard face-to-face class. The teacher planned over the summer how to use the technical opportunities but there was not much time to test it before the course actually started in September. The teacher said ‘you have a different type of educating language. It is really rethinking the language lecturing.’ Ultimately, it is important to have the right level of book for the

language course. The students mentioned that the content of the book seemed to be separate to that of the levels and that content in the book was not linked to the classroom exercises which meant there was limited constructive alignment (Biggs & Tang, 2011). ‘The base was not built on to get it to the next level to make the grammar at the higher level’ (student)

### **Grammar or speaking?**

The teacher mentioned that after five years of studying the language, the students should have the basic grammar level in order to follow this course. However, a diagnostic test of all students showed that many students did not actually have the basic minimum level. This required an adjustment in the overall level taught on the course. The course book was intended to provide the grammar, whilst the classes were intended to focus on speaking. ‘I would not explain the grammar during class, that would be a pity, the group was not beginners level’ (teacher). However, the students mentioned several times that they wanted more grammar to be covered in the class itself. ‘The exam was based on grammar and sentences, true/false, but during the lessons you looked at a film. You got questions, and someone answered it. But that did not connect at all with how you had to construct the sentences’ (student). Since the students were a mix of Dutch and English, one student said ‘You need to have the option to explain the grammar in Dutch so we could follow it. Not everything in [English]. Sometimes things were explained in Dutch (or in English)’.

### **The nature of teaching a language**

The teacher mentioned that video and screens could be used to support the learning process:

*‘It is suitable because you are watching a screen all the time. Maybe this sounds somewhat strange, however visualising is of substantial value to language learning. Any information can be supported by pictures which helps the students to understand or grab the meaning of spoken texts or sentences (role-plays, scenes acted out). With regard to the digital environment: from experience in language teaching: making grammar exercises in a digital environment appeals more to students than making exercises in writing on paper. Sound/Audio of substantial importance as well : ‘The ease to tape and listen to pronunciation and fluency of the target language, steep learning curve’ (teacher).*

One student commented that ‘It is more difficult with a language than a normal lesson. Many terms you can look up yourself, but you need interaction with language. That’s when you use much more than just Skype’ (student).

### **Real world examples of spoken speech in video news segments**

Both the teacher and students were enthusiastic about the use of video clips of news programmes using the language studied. The real-world nature of the rhythms of the spoken language, with sometimes hard to hear words, with topical news content were considered a useful learning approach. Although there were technical issues with viewing the content, once it was viewed it was useful for developing listening and speaking skills. ‘It is good to start with a film, you can ask questions, you get into the language. All were involved. You learn to speak and understand the language. That was good. That was no problem. [...] Watching the films. Talking about it was good’ (student).

## **4.5 Sub Question 5**

**What was the perceived experience of students when learning in this hybrid classroom?**

### **Did you learn in the hybrid classroom?**

When describing their learning in this context, students mentioned some positives and negatives. Students felt they had improved their spoken language in the first semester and gained insight into the real spoken language through watching the ‘news’ video clips. Students mentioned that the technical issues at the

beginning resulted in a lot of lost time; 'In the first period there was real difficulty actually doing something in the lesson. Lots of things were repeated due to difficulties with the technology. It's annoying that you have to repeat things five times, because of the technology and the unrelaxed atmosphere' (student).

### **Different levels of language**

One student said; 'Students had a [language] background which enabled student to pass the exams. To be really honest. I did not learn a lot' (student). Another mentioned that 'The way the lessons were set up was not sufficient to increase language skills by one level. Compared to the English lessons when you can discuss your homework assignment. And if you have difficulty something is done, you can ask questions, the whiteboard is used where things can be written up' (student). Some students commented on the different levels and how this affected their overall progress 'But that level was not further developed. That is because the average level was so low. Which meant it was chosen to do a lower level. In period 1 and 2 quite a few people stopped the course. Switched to another language course. What the current level is, is not known' (student). There were mixed opinions from the students as to how much they had learned. One student said they 'definitely improved. Most progress in Grammar. Worked on the quiz.' Another student said their level had not improved noticeably 'Beginning of semester 2 there was a test that showed the level had gone up a bit. Not completely, not where it had to be' (student). Another mentioned that they did not learn 'lots of new knowledge. Compared to English where I made big improvements' (student).

### **Additional patience needed, focus, distraction and attention span**

Several students mentioned that the hybrid classroom required students to be very patient while both the technology issues were sorted out. Also, patient while listening to students from other locations, and general delays in the communication between the three locations. Because of several time delays due to the technology issues, students felt that there was not enough time to discuss assignments that all students had done. It is not clear whether this would be different in a face-to-face classroom setting.

Students mentioned that it was more difficult to stay focused for 90 minutes when the class was online rather than face-to-face. This also affected their motivation. Some students were checking their phones or not involved in the class when the teacher was teaching them through the online channel. An extra effort needs to be made by students to stay on track. 'If someone is just standing in front of you, you can concentrate much better than if it is via Skype' (student). Another said, there is 'better contact' when the teacher is present. One described it as 'The teacher is there, but not there at the same time.'

### **Students were listened to by management**

Students expressed frustrations about several aspects of the course; they had not been informed in advance that the language course would be delivered via a hybrid format, the technology issues and the overall learning experience. Students discussed this with their class representatives and also with management and in the interview said they did feel their concerns were taken seriously. The format of classes for the other modern languages available on the course were referred to as being 'proper' and 'normal' classes, compared to the hybrid approach.

The students mentioned that the teacher put in extra effort and was trying to make the classes work. The teacher also mentioned the additional work put in, being creative and flexible regarding the technology possibilities and course requirements. It also required adapting and adjusting as the course progressed.

## 5 Conclusion, discussion, recommendations

### 5.1 Conclusion

#### **How do organisational, pedagogical, technical, and content specific factors contribute to delivering a language course taught in a hybrid classroom format?**

It can be concluded that the organisational, pedagogical, technical and content specific factors contribute in both positive and negative ways.

Organisational issues that were relevant in this context can be outlined as follows. There were financial issues that drove the initial idea as a way to provide the course over three locations, but only having to cover the costs for one teacher. The department had both vision and enthusiasm for educational change and provided the staff with space to experiment. However, sufficient educational input from experts on online teaching is needed, at both the development and delivery phase. The organisation needs to have access to sufficient technical support and expertise, and this needs to be made available to all involved in the course (management, teachers and students). Suitable hardware such as classroom spaces with appropriate video conferencing system and good audio need to be available. The necessary software such as video communication programmes need to be available and functioning. When delivering the course over three locations, scheduling issues need to be addressed early to ensure smooth communication with students. It is important to be completely clear from the beginning about the type and format of education that students will receive, what is expected of students including having to concentrate for 90 minutes when a class is online, what the class experience will be like. It is a challenge to find a teacher that has both the subject specialty (the required modern language expertise) and also adequate experience in teaching in a hybrid classroom. When students expressed their concerns to management about how the course started, they were listened to and felt their concerns were taken seriously which indicates the organisation is open to receiving, and acting on, feedback.

From a technical perspective, as mentioned above, the relevant support and technical expertise is needed to provide support in advance, and just-in-time during the course delivery. This ensured technical issues were resolved as soon as possible. Having an environment where the audio quality is completely clear is a challenge. This requires classrooms where external ambient noise is minimised, and where discussions and noises at other locations (from doors closing to students talking or laughing) do not interfere with the overall teaching and class discussion. Flexibility is needed to find technical solutions to problems as they come up, and adequate understanding of the possibilities and limits of the technology available. A period of 'ironing out' the technical challenges should be expected, as technicians, students and teacher get up to speed with the lesson format and communication format.

Pedagogical factors that contribute to the teaching experience in the hybrid classroom are of great importance. Firstly, students expressed the importance of creating a sense of unity, the feeling of being one class (even though students were in three different locations). This establishing of trust between students was considered particularly important when students felt insecure about trying to speak a foreign language across the digital divide to students they did not know so well. The course was for first-year students and there was a variety in the level of (study) maturity and language level. In addition, the combination of two student groups studying in two different languages (Dutch and English) was a complicating factor. For the teacher there were additional challenges in keeping the students at different locations focused on the class. Controlling or communicating with the students at other locations was not always straightforward and it was not easy for the teacher to keep track of what students were actually doing (on task, or checking smartphones). Students required additional levels of focus when following an online class since it was additionally difficult to be patient during technical difficulties, and to listen to many other students, and the teacher, through a video screen. The teacher had subject expertise and worked hard to make the course a success creating not only the course content but also developing an

online teaching pedagogy that would function in this context. Additional challenges included the different dynamic when the teacher was in the class, face-to-face and could communicate more easily and directly with students, than when the teacher was online. Both the teacher and the students need to learn how to function in this new learning context. The teacher worked hard to create a dynamic and engaging hybrid classroom environment, with exercises that paired students across locations, and giving sufficient talking time to all students with interaction and feedback. The student's experience of the course shed light on their perspectives of their overall experience. It must be stated that many of the students initially enrolled on the course, dropped out after the first couple of lessons when they discovered the format that would be used to deliver the lessons and experienced the technical challenges first-hand at the start of the course. Students had mixed perspectives on whether they developed their language skills in the first semester some stating progress on speaking and others saying they did not learn as much in their other (e.g. English) language classes where they were taught face-to-face.

Several content specific factors relating to the specific nature of language teaching were relevant in this context. Firstly, the very varied starting language level of the students meant that the overall language level being taught had to be adjusted in order that all students could participate. Speaking a language in class is a very specific learning experience that focuses on demonstrating and developing individual competency. Being able to understand the foreign language spoken by the teacher (via video) and other students (via video) provides additional challenges. Having a suitable textbook for the course is essential to a successful course. The book focused on grammar and there were online exercises to be done as preparation. However students wanted to have more focus on grammar in class while the focus from the teacher was on creating maximum chance to develop speaking and listening skills. This means that in the case of a language, decisions have to be made regarding which part of the language will be focused on in the hybrid classroom (oral, listening, writing, or reading) based on the possibilities of the technology. Using videos of news segments in the foreign language exposed students to the language as used in the real world which pushed their comprehension skills and also held their interest with relevant and current topics.

## 5.2 Discussion

The initial drive for this initiative was to find a practical and affordable solution to deliver the course over three location with one teacher. Looking at the additional hours needed to set up this course it can be questioned where money was saved by the organisational level. The department had to cover the costs for one teacher, but the organisation had to make technical staff available at all three locations to ensure the course functioned. This would indicate that costs were saved at one part of the organisation, but not overall. This raises the question of whether this course was an experiment with costs, or the delivery of a language course with paying students, or a combination of both.

There were a number of additional factors which made the introduction of this hybrid course more challenging. The course was developed at short notice since no course existed. The three locations had different classroom environments that were not equal. The group size of students at each location were not equal, varying from 9 at one location, to 1 at another. There were differences between the students (different educational and cultural backgrounds, different starting levels of the language, different degree of motivation for the course). The idea to stream the news video segments live across the software pushed the capabilities of the technology to its limit and was in fact not possible. Before the year started, the teacher had already planned a sabbatical in period 3 which lead to disruption for students studying across four periods.

When examining the model by Margulieux et al. (2016) it can be concluded that the course engaged all nine aspects of the model; the content was provided synchronously and asynchronously by the lecturer, and also purely on line. Lesson content was received by students (online and face-to-face) and also content was applied in the many speaking and listening exercises in class and online.

Linder (2017) suggests that in a hybrid classroom the teacher should shift to andragogical principles (a specific approach for teaching adults, rather than pedagogy for children). In this case the teacher did indeed take that approach, but as first year students during their first period of study, the particular group of students on this course did not all possess the same study skills or experience which made this approach challenging. Keim (2015) stated that when teaching in a hybrid language course, the combination of face-to-face and online teaching ‘should be not too open but not too restrictive as well as not too optional but not too compulsory.’ And that ‘tools used should be aligned with learning needs as well as communicative goals.’ The teacher worked hard to adapt both the content and form of delivery to match student level based and to adapt the teaching based on what the technology was capable of.

Finally, two key challenges were identified by Bower et al. (2013). These are communication and cognitive overload caused by split attention. In this case, communication was a key factor that played a role in this course. Communication between management and the students, between students in the (online) class, and between the teacher and students. The additional challenge of split attention causing cognitive overload was also experienced by students in this case. This was evident in the extra concentration needed by students to remain focused and to avoid distraction (e.g. other classmates, smartphones). This was also relevant for the teacher who had to make additional effort to include all students in the class, both those physically present, and those online. This was made more difficult due to external factors such as the functioning of the technology, audibility of classroom discussion and the different level of the students.

## 5.3 Recommendations

Based on this specific case, the following recommendations can be made when developing and implementing a hybrid language course in a similar context.

### Management

- Management should establish clear goals in advance regarding success criteria for the course. This includes clarifying whether this is an experiment, and a complete risk analysis.
- Management should make a clear cost analysis at an organisational level regarding what the costs will be. This should include costs per student to deliver the course which contain costs for technical and support staff (not just the teacher).
- Provide adequate and in depth support for the teacher, from education experts with experience in this context, when developing the hybrid course.
- Communicate the format of instruction to students from the very beginning and set realistic expectations regarding what the classes will be like, and what additional effort (e.g., extra concentration and preparation) is needed to for students to study on the course.
- Provide (ongoing) training for staff teaching in a hybrid classroom that address the issues of communication and split attention that can lead to cognitive overload.
- Consider carefully at which part in the course, and with which students an experiment should be conducted (e.g., with first year students who are just starting to develop their study skills in higher education, studying in two different languages, with varied language levels, across three locations, with different group sizes).

### Organisational/Technical

- Ensure that classroom facilities are similar across all locations, that they can be booked as classrooms in the scheduling system.
- Ensure that scheduling across all locations is done well in advance and that the time of the hybrid class fits into the students other class schedules.
- Check in advance the technical possibilities for delivering certain content (e.g., simultaneous streaming of video across multiple locations) and find other solutions (e.g., students view a pre-shared link individually with headphones on their own device during the class and then refer back to this).

### **Pedagogical/Content**

- Create the entire course well in advance so that the pedagogical approach can be tested and developed in sufficient detail.
- Invest adequate time and place sufficient importance on creating a sense of class unity between the students at different locations, to build trust between students and enable a learning environment which is open and respectful for learning.
- Consider carefully which parts of the language are best suited to be taught through hybrid classroom format (speaking, listening, reading, and writing) vs. grammar and vocabulary.
- In class place specific focus on how to study and succeed in the hybrid classroom (importance of preparation, paying extra attention, trusting and respecting all students)

## **6. Critical reflection**

Reflecting on the overall research process and the recommendations above there is a lot to learn from this case. Implementing this kind of educational innovation is challenging in a simple case, but there were many complicating factors that made this situation particularly challenging.

The research only examined the first two periods and not the entire year. The focus was on the elements of the TPACK and educational development. Further research could examine specific learning results in more detail collecting quantitative data from video viewing logs, hours on line, in class participation, and student results based on being in class with the teacher vs. on line. The researcher involved was also working as a teacher on the course which may have affected the ability to be neutral and suitably critical. Only a small number of students participated in the research which may not have been representative of all perspectives. The students who were interviewed were those who specially showed up to class for this purpose which may mean they were more motivated and had a different perspective than those who did not attend the class. No students who quite the course in the first few weeks were interviewed which could have provided insight into the specific factors that made them switch to the other language offered on the course.

It was very ambitious and creative of the department to propose and provide this solution to the problem faced of how make it affordable to teach a small number of students with one teacher across three locations. However, adequate educational support in the form of online didactic expertise needs to be provided. Enough time needs to be allocated to develop and test the course. Starting with a language course was very different than something more tangible such as statistics or finance. The enthusiasm and innovative spirit needs to be tempered with a understanding of just how complex and different it is to deliver a hybrid course. Much has been learned in this first version of this course which can be applied when other courses are developed in the future. A great deal of effort was made by all involved and the students acknowledged this and made differing degrees of progress. As the educational landscape continues to shift and more classes can take place online or in a hybrid format, then it is essential for higher education to research, develop and experiment with new teaching approaches. As such, it is hoped this hybrid language course will provide a platform for future experiments and educational developments in a solid technical and pedagogical context fully supported by the organisation.

The author would like to thank all those involved in the research including the manager, technician, teacher and students.



## Bibliography and sources

- Andriessen, D., Onstenk, J., Delnooz, P., Smeijsters, H., & Peij, S. (2010). Gedragcode praktijkgericht onderzoek voor het hbo: Gedragcode voor het voorbereiden en uitvoeren van praktijkgericht onderzoek binnen het hoger beroepsonderwijs in Nederland. Den Haag. Retrieved from <http://www.hva.nl/wp-content/uploads/2011/08/Gedragcodepraktijkgerichtonderzoek.pdf>
- Biggs, J., & Tang, C. (2011). Teaching for quality learning at university (Fourth ed.). Maidenhead: Open University Press.
- Boeije, H. (2012). Analyseren in kwalitatief onderzoek: Denken en doen (2nd ed.). Den Haag: Boom Lemma.
- Bower, M., Kenney, J., Dalgarno, B., Lee, M. J. W., & Kennedy, G. E. (2013). Blended synchronous learning: Patterns and principles for simultaneously engaging co-located and distributed learners. Electric Dreams: 30th Ascilite Conference Proceedings, 92–102. Retrieved from <http://www.ascilite.org/conferences/sydney13/program/papers/Bower.pdf>
- Corbin, J., & Strauss, A. (2008). Basics of qualitative research (3rd ed.). London: Sage Publications.
- Fransen, J. (2013). Introductie op evaluatieonderzoek. Den Haag: Inholland.
- Fransen, J. (2015). Instrumentatie van beteknisvolle interacties. den haag: Inhholland.
- Fullan, M. (2007). The new meaning of educational change (4th ed.). Abingdon: Routledge.
- Griffioen, E. (2016). De betrokkenheid en prestatie van eerstejaars HBO toerisme studenten in een geflippte leeromgeving. Open Universiteit Nederland. Retrieved from <https://dSPACE.ou.nl/bitstream/1820/6966/1/OWEGriffioen-25072016.pdf>
- HBO Raad. (2007). Brancheprotocol kwaliteitszorg onderzoek (BKO) 2009-2015 (Vol. 2015). Den Haag. Retrieved from [http://www.vereniginghogescholen.nl/vereniging-hogescholen/publicaties/doc\\_view/4-brancheprotocol-kwaliteitszorg-onderzoek-bko-2009--2015](http://www.vereniginghogescholen.nl/vereniging-hogescholen/publicaties/doc_view/4-brancheprotocol-kwaliteitszorg-onderzoek-bko-2009--2015)
- Keim, L. (2015). Combining online and hybrid teaching environments in German courses. Research-Publishing.Net, (2015), 294–300. Retrieved from <http://ezproxy.lib.utexas.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED564171&site=ehost-live>
- Linder, K. E. (2017). Fundamentals of hybrid teaching and learning. New Directions for Teaching and Learning, 149. <http://doi.org/10.1002/tl.20222>
- Margulieux, L. E., McCracken, W. M., & Catrambone, R. (2016). A taxonomy to define courses that mix face-to-face and online learning. Educational Research Review, 19, 104–118. <http://doi.org/10.1016/j.edurev.2016.07.001>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. Teachers College Record, 108(6), 1017–1054. <http://doi.org/10.1111/j.1467-9620.2006.00684.x>
- Pijlman, H. (2017). Advies werkgroep kwaliteit van praktijkgericht onderzoek en het lectoraat. Den Haag. Retrieved from [http://www.vereniginghogescholen.nl/system/knowledge\\_base/attachments/files/000/000/670/original/Advies\\_Werkgroep\\_Kwaliteit\\_van\\_Praktijkgericht\\_Onderzoek\\_en\\_het\\_Lectoraat.pdf?1485338022](http://www.vereniginghogescholen.nl/system/knowledge_base/attachments/files/000/000/670/original/Advies_Werkgroep_Kwaliteit_van_Praktijkgericht_Onderzoek_en_het_Lectoraat.pdf?1485338022)
- Robson, C. (2004). Small-scale evaluation: principles and practice. London: Sage Publications.
- Robson, C. (2011). Real world research: A resource for users of social research methods in applied sciences (Third ed.). Chichester: Wiley.
- Saunders, M., Lewis, P., & Thornhill, A. (2016). Research methods for business students (Seventh Ed). Harlow: Pearson.

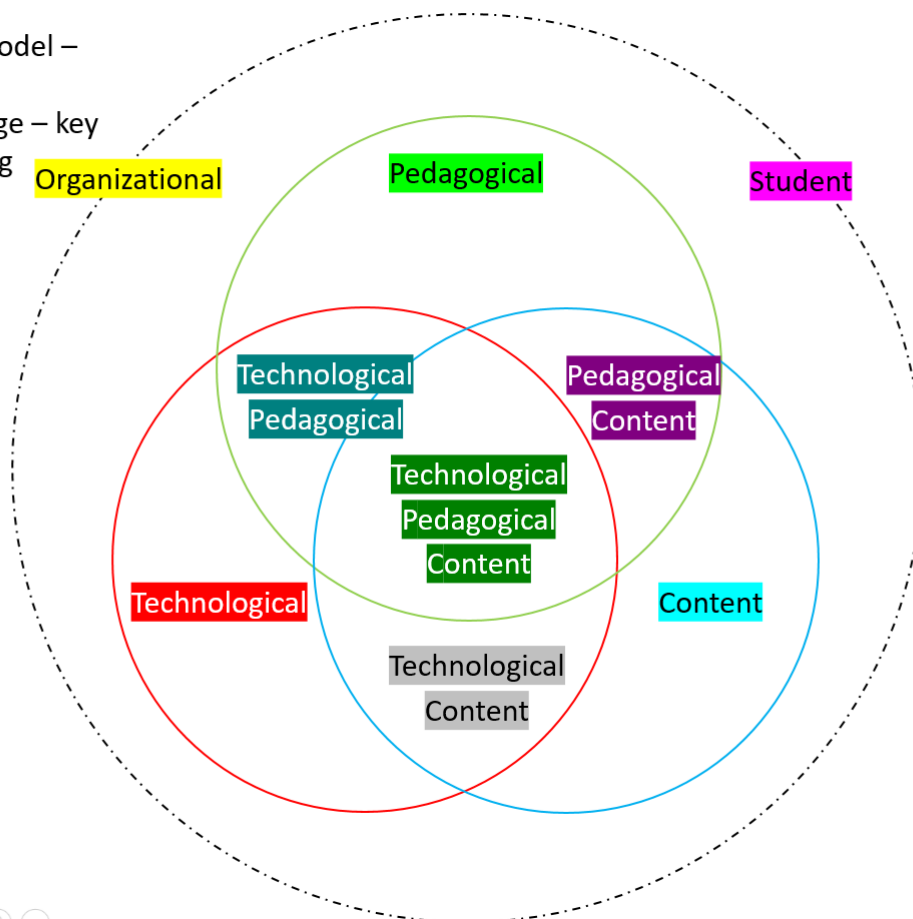


- Seidman, I. (2006). Interviewing as qualitative research; A guide for researchers in education and the social sciences (Third ed.). New York: Teachers College Press. Retrieved from [http://home.ku.edu.tr/~musomer/TEACHING\\_files/Irving Seidman Interviewing As Qualitative Research A Guide for Researchers in Education And the Social Sciences 2006.pdf](http://home.ku.edu.tr/~musomer/TEACHING_files/Irving%20Seidman%20Interviewing%20As%20Qualitative%20Research%20A%20Guide%20for%20Researchers%20in%20Education%20And%20the%20Social%20Sciences%202006.pdf)
- Voogt, J., Fisser, P., Pareja Roblin, N., Tondeur, J., & van Braak, J. (2013). Technological pedagogical content knowledge – a review of the literature. *Journal of Computer Assisted Learning*, 29(2), 109–121.
- Woolfitt, Z. (2014). Catching the wave of video teaching; Supporting lecturers in the tourism team Inholland Diemen in developing video teaching skills. Inholland University of Applied Sciences. Retrieved from <http://www.inholland.nl/onderzoek/lectoraten/elearning/inzet+video+en+weblectures/>
- Woolfitt, Z. (2017). Flipping, blending and videoing in a volatile, uncertain, complex and ambiguous world. In *Praktijkgericht onderzoek geeft kleur* (pp. 103–109). Den Haag: Inholland. Retrieved from <https://www.inholland.nl/media/17326/praktijkgericht-onderzoek-geeft-kleur.pdf>

## Appendix – TPACK model & coding

- 1 - Organizational
- 2 - Student
- 3 - Technological
- 4 - Pedagogical
- 5 - Content
- 6 - Technological/Pedagogical
- 7 - Technological/Content
- 8 - Pedagogical/Content
- 9 - Technological/pedagogical/content

TPACK model –  
types of  
knowledge – key  
for coding



TPACK looks at the types of knowledge that is needed. This coding uses these categories, not always focused on the type of knowledge, but more on issues regarding technology, didactics, etc.

## Excerpt from Interview 1 - Team Manager

19th July 2018 – 09.00-10.00 face-to-face, audio

*It is important and relevant for Inholland to understand how to give classes via video for online learning since it is expected that these types of requests will only increase in the future. I hope to get an overview of management's ideas behind the setting up of the course and your perspective from your location on what worked and what needs to be improved for future iterations. The focus is exclusively on the first two periods when the lessons were provided online, not on periods 3 and 4. All data collected is being reported anonymously and location neutral.*

**Can you give some insight into the ideas behind setting up the distance learning course? What were the initiating factors?**

It has something to do with the small number of students and the desire to carry it out at three locations. Primarily there was a financial reason for this. Operational, financial, how can you account for it. In my opinion, that was the most important reason to start this.

**Was it discussed with other team managers, how did the idea develop?**

I think team manager x was the main motivator, had some experience. Wouldn't it be nice to experiment, see if it worked, because the team leader was enthusiastic to try and motivated to try this sort of thing in the future. I was enthusiastic because we were thinking along the same lines. How can you create a space for digital learning. That you detach the teaching from one specific physical location. You can learn everywhere. It all happened very quickly. I have to be clear that from the curriculum side, the programme, there was no initiative regarding this wish. This was an idea that developed round the management meeting table. And we carried out that wish.

**What do you mean by organise it well?**

Firstly to look straight away at which classrooms could be used. We got in touch with the service desk at location X. Which rooms would be suitable. Difficult to do but we did it all quickly. We reserved the classrooms at each location. The service organisation is very 'lean and mean' and cooperated with us. They deserve a gold star! The technical video support looked at it, if we can give a gold star somewhere, then it is to those guys. They got it all together. Then we needed to get the information to the students. For the students, they were completely surprised. They found out on the first day that it would be organised this way. And then there was no turning back. And because they were new, they were very surprised. Ok, if that the way it is, that's how it is going to be. Although the students could see from the very beginning that it was a sort of 'pilot programme'. It was in a start-up phase, lots of unknowns, all the extra staff who were there to see if it went well, so the students could sense that it was not all 100%. Then it was also difficult, we could only hire the language teacher at the very last moment. And what was really exceptional, the teacher made a programme at short notice, and said to me from the beginning 'Great that we are going to do this, but shouldn't we first look at the quality of the students?' So the teacher arranged a test at the beginning, tested the students, and then came back with

## Excerpt from Interview 2 - Video Technician

Telephone, audio, 19<sup>th</sup> July 2018, 11.00-11.45

**What was necessary from the technical side (hardware and software).**

That was already there. That's why we used the conference rooms and Skype for Business is the standard software on all equipment.

**How did it go in the first few lessons from a technical perspective.**

What was most noticeable (not the technical side), there was a difference in group size. That made the communication for the teacher very difficult. That was quite difficult to manage. Skype for Business is a good format, but it is not possible to show videos through it. It was possible another way, via adding in a power point, but that meant extra time was needed to load that. And if you communicate this way with students, especially if they are not all the same group size, there is not much patience to wait for the others while this uploads. That is a complicating factor.

**Did sharing video live in one environment was not so possible in Skype for Business?**

It did not work in this format.

**Speed of connections, audio, any comments?**

The audio connection was fine. But what was annoying. There were external disturbances from the classroom. There was a fire drill at one class. So part of the group had to leave the location. At one location, there was lots of external building work, lots of noise. Then a leaf blower came by the conference room, very disturbing. That is not so well understood at the other locations. That is not to do with the software, more the external noises.

**Ambient noise is very important factor if you need to communicate?**

Yes

**What advice would you give regarding some one teaching in a similar setting in the future?**

It is not just the technical side. You can't separate it from the pedagogical element. They need to be connected. Technical side must work well. The teacher needs to know the limitations of the technology. If you use Skype for Business, don't try to send videos through. If must do that, find an alternative (e.g. Zoom, not standard application, but could have been an option). Also very important, we know this from other experiments, if you communicate via video conferencing then the setting at each locations should be equal. This was not so in this case. (1, 3 and 9 students). Standard participants need to be as equal as possible. The number, the type of support. Keep it equal. Communication improves. When you have more attendees in person, than online. It is unequal. Try to get it at the same level. If that is not the case, students in the class or at home, participants at home not connected via a direct video link, but can communicate via chats. So a moderator can help in that role. Each setting you need local support, which can be different per situation, how you arrange that. In this setting, there was

## Excerpt from Interview 3 - Language Teacher

By phone call, recorded audio - 10.00-11.10, 18th July 2018

*Questions were emailed to the teacher as the interview started so they could be followed.*

**Thank you for being available today. Summary, will send to you to confirm/check/correct. Focus is on Semester 1. Can you tell me how the idea was originally proposed to you about hybrid classes?**

First I was hired to teach the language. The hybrid thing was not an idea presented at that time. First to teach the language. It took some time to agree, since I had not taught that language for 10 to 15 years. Just before summer holiday (2017), they came up with the idea, I thought it was manager X with the original idea. Had a meeting via Skype with six or seven people, and that is how the idea was proposed. Very interesting. To me. There were some challenges to overcome, and this made it more interesting. A motivator.

**The course was starting in September, what happened before the first class?**

The idea was presented just before the summer. I thought over the summer how to use this technical environment. Looked with technical support, to use the round table facility, thought about a book, literature, a learning method. Finding the right material was not so easy, took some time. Finally ended at a publisher who seemed to be suitable. Initial thought was this system could be used for oral practice. So a lot of interaction during class. So I would not explain the grammar during the class, that would be a pity, group was not beginners. So they already have an idea of the grammar, or had it for four or five years in secondary education. Basis is there, so I can move forward through there. Books and supporting digital material for them to study. They could ask about grammar in the class (or outside). So a student handbook was created. Finding right book took some time. Student had to order the book from the publisher. No one had it in the Netherlands. Not in the study store. They had it within a week. (They could have had it within a week, but some did not).

**Focus on oral practice? How was course structured?**

Exercises at home, from a book, supporting digital environment to practice. They had to watch the 100 second news link sent the day before class. In the morning before class. First year students, found that difficult, they had to travel to the school. They found that difficult. And they would make questions for their co-students. Then a 5-6 minute documentary was sent to them. A link was in the handbook. They had to summarise and prepare questions. The idea was that students would discuss or ask question across the locations, in the language, so they would be prepared. They were not beginners. The class was open for questions if they had that on the grammar. Progressing each week. Role play, discussion, interviewing each other. That was the structure, they would get used to the listening, and real speech. Not the listening components from the book that were too prepared. Get used to the real language.

## Excerpt Interview 4 - three students / location A

7th June, 13.00-13.30 – Conference Room, Face-to-face

### How did you experience the first period of lessons?

There was not a clear structure. Each lesson was a surprise regarding how it would go. The first lesson were informed we would do this via Skype. And then it did not flow so smoothly or easily, such as the microphone not working, or the films did not work, communication was very difficult. In the first period there was real difficulty actually doing something in the lesson. Lots of things were repeated due to difficulties with the technology. You could not hear what was being said. In one location an answer was given but it had to be repeated five times before it could be heard in the other location. We had to keep asking for information to be said again.

As a student at the beginning, you don't know each other. If you are a little insecure about your (language) accent. Then you have to say a whole sentence in (language) and then you can understand that you don't dare to say it really loud. Then you get to know your own class members a bit, you travel with them in the train. But then there are other students at the other locations and you only meet them one time for the exam. You still don't know them. You know their name but that is it. That meant it was contact only via the screen. We missed a sort of nice interaction with the other students. It felt a little bit uncomfortable the whole time. You don't feel so comfortable, if you've written a summary of one of the films, you don't feel comfortable enough to share that.

It was not experienced as being a very easy and relaxed atmosphere.

Its annoying that you have to repeat things five times, because of the technology and the unrelaxed atmosphere.

In the first semester, all the classes used Skype. In the first period, the teacher went to different locations each week. So then you had a bit more contact. In period 2 there was more face-to-face contact at the destination where the most students were. Actual face-to-face with the teacher only happened with the teacher in period 4 (and with the other teacher in period 3). In the total teacher visited this location about 6 times out of the 14 weeks. In the very first lesson we were sitting in this room, and then the technology did not work at all. The camera was over there but no one could see us and we could not hear any one, no one could understand us and you had to lean into the microphone on the table. That was the most chaos I think.

### Support at this location for the lesson?

They definitely worked on it. They tried. But it was the form of the lessons that did not work. You really try your best with the technical aspects, but if the manner of giving lessons doesn't work, then it just doesn't work. In the end actually the technical aspects worked well. Someone came along from IT who understood it. At the end of the first semester the technical aspects worked but not the lesson technique.

## Excerpt Interview 5 - two students / location B

10.00-10.30 – Thursday 7th June, 2018

Interviewer in location B, face-to-face with two students

*It was explained to the students that the interview was anonymous and the students would have the chance to comment, adjust and give feedback on the summary of the meeting before it was finalized.*

### Student 1:

Did not like the way the course started off regarding lessons and lectures. It was confusing because a certain level of [language] was needed. Student had that level and was 'lucky' having studied the language. When it was realized the class was via Skype, student was not happy about it. People already in the class dropped out to join Spanish (which was face-to-face). From a technical perspective, teacher was trying their best however sometimes sound or technology was not working. When a PowerPoint the slide was added at one location, group could see it but not the other. If the teacher asked a question, there was talking at other location and question could not be heard. When you answered, teacher could not hear it. The technology part was very chaotic. And even when teacher was at this location, the system at another location did not work, so they could not hear us. So they had to reschedule the lectures. So teacher had to cut lesson short since other students could not hear the other students. Sometimes lessons were only 45 minutes or max one hour. The teaching itself was o.k.. The teacher could give an assignment, but since students were at different locations there was not enough time to discuss the assignment students had done. Teacher was busy with another location, technology was not working. Teacher was trying to get to the other locations and discuss with them, but the time ran out to discuss with the students in the classroom. Students had prepared the work but there was not enough time to discuss it which felt like a waste. This was all due to the fact the technology was not working.

### Student 2:

If teacher was here, then there were 9 students at the other location. When they were talking amongst themselves this interfered with the contact and teacher. Or the teacher had to repeat the question several times. This resulted in spending 20 minutes talking to the students at another location, but it did not result in much information which felt like nothing was done. The assignments were good. But if it takes the whole lesson to discuss or speak about it, then it is not worth it. The contact is not so valuable due to the lack of concentration (the other students were there but may have been on their mobile phone).

### Student 1

The technical issues were not just start up issues. They were not resolved. In period 1.2, a student was upset about it and wondered why Spanish students could have proper contact while the [language] students had to do it by Skype. The student discussed with class representative and complained about it and it was discussed in the meeting. As a result of this, student was informed it would be changed for period 1.3 with a teacher physically there, face-

## Excerpt Interview 6 - one student / location C

via Skype – 09.00-09.30 – Thursday 7th June, 2018

*Interviewer in one location, student at another location.*

*It was explained to the student the interview was anonymous and the student would have the chance to comment, adjust and give feedback on the final report of the meeting.*

### Course in general and technical set-up

In general the student felt that things had gone o.k. during the course. In the first two lessons, there was a problem at the room and the student could not get into the room to follow the lesson. This happened twice. A number was provided to the service desk so the student could contact someone to help. From that point on, access to the room was not an issue. At the beginning of the lesson, there were sometimes issues with sound and image, and in a couple of cases 15-30 minutes were spent sorting out the technical issues. From that point on, the sound and visual quality were sufficient. The student used the Inholland round-table facility to connect to the class and the Inholland equipment. From a technical perspective, the student asked that someone always checks the sound and video connections ahead of time so that it works, so the lesson can then begin on time without losing time. Some explanations were given at the beginning how to connect to the system and open the links and this was helpful. The student felt their own level of competence with technology to be adequate to access the course information (via the video link). There was someone at the students location answer questions from a technical perspective if needed.

### Teaching and Learning

The student commented that following a lesson on-line requires more attention and concentration to stay involved. By its nature, the video format meant that a lot of the lesson involved speaking and talking assignments which meant that the student felt the biggest improvement was in spoken [language]. During period 3 a different arrangement was made and the student had individual lessons (1 on 1) with a teacher at an Inholland location. The student experienced this as positive since it was 1.5 hours of individual tuition. When discussing the role of the teacher in distance learning, the student mentioned that it is difficult for the teacher to involve the various students at different locations via the screen and that sometimes it did not feel as though the teacher's attention was equally divided through the different locations. When activities and discussions were taking place in the location where the teacher was, in face-to-face interaction with other students, it was difficult to be involved in those discussions. Also, it is not easy for a teacher to know exactly what a student is doing when they are attending the lesson via video (e.g., their concentration level, or if they are also looking at their phone). This is different to being in a class where there is more oversight from the teacher.