**Deliverable Title** | Student Survey Report  
---|---  
**Level of dissemination** | Public  
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**Version** | V3  
**Date Version** | 30/8/2016  

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1. EXECUTIVE SUMMARY

Acknowledging the potential of videos and other ICTs to transform HE but also the crucial role of teachers in any effort to bring about change and innovation, the EU-funded project RELOBIE: Reusable Learning Objects in Education (2014-1-FI01-KA200-000831) has aimed to improve adult and higher education through strengthening instructors’ knowledge and skills in effectively using videos and other technologies in teaching and learning. The 2-year long project (Sept. 2014 – August 2016) integrated data from several sources to portray a comprehensive picture of the expectations and experiences of students and instructors in the participating institutions regarding the educational application of videos and other digital technologies. Partners utilized findings from the study to empower educators with better tools, skills and know-how on video production and use in particular, and technology-supported learning more generally.

This report presents the results of a study on student perceptions and experiences regarding the use of videos and other technological tools in higher education developed within the scope of the RELOBIE project. Through a cross-national, in-depth online survey of n=530 students in four partner countries (Estonia, Cyprus, Finland, Portugal), the study has gathered some useful insights into instructors’ perceptions, motivations, and experiences regarding the use of digital videos and other technologies in their personal life, and for academic purposes. The study has also shed some light into both facilitating and inhibiting factors to the adoption and effective the use of videos and other technologies in the higher education classroom.

Findings from the current study concur with those of previously conducted studies, which suggest that most higher education students (and their instructors) tend to have very positive attitudes toward the instructional use of videos and other contemporary technologies, seeing them as a critical aspect of the modern HE learning environment. Students in our study stressed the importance and value of videos and other technological tools in enhancing the learning process in both traditional brick-and-mortar classrooms and virtual learning environments. With regards to videos, in particular, students pointed out that their inclusion in the classroom is important because videos can be watched over and over again and can be easily re-winded, paused, and reviewed as many times as required. Respondents also highlighted the fact that videos can serve as motivational tools and as tools for introducing new concepts or better illustrating or clarifying concepts introduced in class.

At the same time, it became obvious in this study that HE students tend to attend courses where instructors lack appreciation of the true potential of technology for transforming the nature of higher education, viewing technology as mainly a useful aid for delivering course content and/or for increasing student motivation, rather than as a tool for transforming teaching and learning. Most of the respondents, indicated that their instructors restricted their use of technology to mainly representation tools such as PowerPoint, and made minimal use of inter-
active technologies (social media, simulations, games, educational software, and media manipulation software, etc.) that can promote student-centered, collaborative, and inquiry-based learning environments.

Students in our study reported not only opportunities, but also a number of barriers to the educational use of videos. Handling of technical issues by faculty and technical staff at their institutions was the main issue/challenge experienced by students. A considerable proportion argued either that their instructors did not seem to have adequate technology skills to handle technical issues regarding video use, and/or that there was lack of readily available administrative/technical support at their institution for the integration of videos or other educational tools into teaching and learning.
2. STUDY DESCRIPTION

2.1 METHODOLOGY

The reported study focused on investigating HE students’ perceptions, motivations, and experiences regarding the use of digital videos and other technologies for personal, professional, and instructional purposes. Through a cross-national, in-depth survey of students’ attitudes and experiences with digital technologies in the partner institutions, the study was designed to address the following research questions:

1. What are students’ attitudes and levels of use of videos and other technological tools in daily life and in the higher education classroom (face-to-face, blended, or completely online)?

2. What factors are identified by students as encouraging or inhibiting the adoption and effective use of videos and other technologies in the higher education classroom?

To provide responses to the research questions, the project consortium developed, pilot tested and conducted an in-depth student survey. The survey instrument was built based on the international literature and other student technology surveys employed in previous studies. Most of the questions were closed-ended, requesting Likert-type ratings or multiple-choice responses. A few open-ended questions requiring text-based responses were also included, in order to allow respondents to express ideas difficult to place on a Likert-scale and to obtain more comprehensive information.

The survey was divided into four sections as follows:

- **Demographics:** Age, gender, affiliation, marital status, employment status, field of studies, level of studies, student status (full-time, part-time, other).

- **Technology Background and Experiences:** Level of familiarity with technology, number of hours spent interacting with technology (at home, the university, and/or at work), home access to the internet, frequency of use of different technologies (e.g. email, personal website, smartphones, tablets, e-books/e-readers, etc.) either personally or for studies, extent of technology integration into classes, frequency of instructional use of different technological tools (e.g. PowerPoint presentations, Prezi presentations, lecture capture, podcasts, simulations, gaming, virtual worlds, etc.) in courses taken, level of interest and experience in course delivery styles involving a significant online component (completely at-distance, blended/hybrid, flipped classroom, MOOC), number of fully online courses taken, format of courses currently taken (completely face-to-face, blended/hybrid, fully online, MOOC), preferred mode(s) of instruction.
• **Usage of Video in Studies**: Frequency of video incorporation into courses (face-to-face, blended/hybrid, completely online), how videos tend to be used by instructors (e.g. to explain concepts, to introduce concepts, etc.), length of video programs or segments shown, types of videos shown (e.g. captured lectures or mini-lectures, YouTube or other ready-made videos, guest performances/public screening of video, etc.), optimal length for videos (shown in class, posted online), quality of captured lectures or mini-lectures posted online by instructors, quality of audio files posted online, device usually used to view posted videos posted (PC, tablet, mobile phone).

• **Incentives and Barriers to the Instructional Use of Videos and/or other Technologies**: Reasons for instructors to use Youtube or other videos in face-to-face classrooms, reasons for using videos for lecture capture and/or for recording mini-lectures, issues/challenges encountered in courses in which instructors make use of videos.

The survey instrument was developed in English. It was posted electronically via Google forms, and it took about 20-25 minutes to complete. It was administered to students in four partner institutions: Abo Akademi, Finland; Universidade de Coimbra, Portugal; European University Cyprus; and Tartu Ulikool, Estonia. Invitation messages explaining the purpose of the study, and providing a link to the survey, were sent via email to all students in these institutions. Participation was completely voluntary and anonymous. No identifying information was collected from participants. A total of 530 students responded to the survey.

### 2.2 RESEARCH FINDINGS

We next present and analyse student responses to the questionnaire. Findings have been organized into four sections, reflecting the structure of the surveys: (i) Demographics background; (ii) Technology background and level of use; (iii) Video usage in studies; (iv) Incentives and barriers to the educational use of videos.

#### 2.2.1 Demographics Background

Three-fourths of the 530 students participating in the study were female (n=396), and 25 percent male (n=134). The distribution of the respondents’ affiliation was as follows:

- European University Cyprus (57%, n=300)
- University of Coimbra, Portugal (24%, n=126)
- Abo Akademi, Finland (18%, n=94)
- Tartu University, Estonia (2%, n=10)

Figure 1 displays the participants’ age distribution:
Participants’ age distribution is tending toward younger cohorts. However, a sizeable proportion were mature learners. Almost half (46%) were at least 25 years old, while a quarter (25%), were older than 30. This can be explained by the fact a bit more than half of the participants were either graduate, doctoral, or adult education/open university students (see Figure 2).
Three-quarters of the respondents (75%) were enrolled as full-time students, but there were also many who either studied on a part-time basis (14%), or were open university students (11%) (see Figure 3).

As shown in Figure 4, more than half of the students were participating in the labour market. Twenty-six percent were working full-time, 19% part-time, and 11% sought employment but were unemployed.
The self-selected nature of the sample, and the very low response rate in one of the institutions (Tartu University), made the collected data unsuitable for comparisons between institutions/countries. Similarly, the varied response rate among different institutions, and Tartu University’s extremely small sample size, did not permit comparisons among academic disciplines. Thus, we chose to analyse the whole sample data across as a single cohort irrespective of affiliation and disciplines.

### 2.2.2 Technology Background and Level of Instructional Use

In the first question of Section 2, students were inquired to indicate their level of familiarity with technology. Their responses appear in Figure 5.

Sixty-percent of the students rated their level of familiarity with ICT to be at the advanced or expert level. At the same time, a considerable proportion (37%) considered themselves to be at an intermediate level. This suggests that a sizeable proportion, while being experienced with technology, lacked relative sophistication. Nonetheless, less than 3 percent rated themselves as beginner.

Participating students’ comfort with technology was also evidenced through their responses to a related question inquiring them to rate, using a 4-point Likert Scale (4=Very Easy 3=Easy 2=Moderate Hard 1=I can’t do this), the level of ease with which they could do each of a number of different activities involving technology (see Table 1).
Table 1. Percentage of students finding it "Easy" or "Very Easy" to use each technological tool

<table>
<thead>
<tr>
<th>Activity</th>
<th>% of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Look at friends' photos or videos online</td>
<td>99.1%</td>
</tr>
<tr>
<td>Send an email</td>
<td>98.7%</td>
</tr>
<tr>
<td>Download photos from a camera or phone</td>
<td>97.5%</td>
</tr>
<tr>
<td>Download music or other content to your phone or MP3</td>
<td>93.2%</td>
</tr>
<tr>
<td>Attach a printer to a computer</td>
<td>93.0%</td>
</tr>
<tr>
<td>Download and/ or install software/apps</td>
<td>89.9%</td>
</tr>
<tr>
<td>Collaborate using online documents (Dropbox, Google Docs, ...)</td>
<td>88.2%</td>
</tr>
<tr>
<td>Edit a photo</td>
<td>87.0%</td>
</tr>
<tr>
<td>Use web tools to receive online information (RSS feeds, Google+, LinkedIn, Twitter feeds)</td>
<td>86.0%</td>
</tr>
<tr>
<td>Create a spreadsheet</td>
<td>85.7%</td>
</tr>
<tr>
<td>Find out if online content is trustworthy</td>
<td>78.3%</td>
</tr>
<tr>
<td>Record and edit audio</td>
<td>69.9%</td>
</tr>
<tr>
<td>Record and edit a video</td>
<td>69.5%</td>
</tr>
</tbody>
</table>

As seen in Table 1, the vast majority of students find it “very easy” or “easy” to do all of the above listed tasks.

Almost all students (99%) indicated having internet access at home, as well as unlimited (mobile) Internet access by their smartphone, tablet or other device (88%). They also reported making extensive daily use of technology at home, the university, and/or at work.

Technology usage patterns and frequency were measured by providing respondents with a list of 21 different technological tools and asking them to indicate, using a 5-level Likert scale (5=Daily, 4=Weekly, 3=Monthly, 2=Less often than monthly, 1=Never), the frequency with which they use each tool in their personal or professional lives (other than teaching). Figure 6 shows the percentage of respondents specifying that they use each technological tool on a daily or weekly basis.

As shown in Figure 6, large majorities of the students report using on a daily or at least weekly basis the following tools: Laptops/PCs (99%); Emails (97%); Smartphones (93%); Social networking tools such as Facebook (90%) and media sharing sites such as YouTube and Vimeo (82%).

More than half of the participants also use on a daily or at least weekly basis their personal website (64%), Instant Messaging (61%), tablets (60%), online document storage and sharing tools (59%). Around half of the participants regularly use social media like video conferencing/web-conferencing tools such as
Figure 6. Percentage of students using each technological tool on a daily or weekly basis

- Remote access to your PC (e.g.,%) 12,2%
- E-portfolios 14,2%
- MOOCs (Massive Open Online...) 15%
- Multimedia editing software (e.g.,%) 20,3%
- RSS Aggregator/Reader (e.g.,%) 25,4%
- E-books/E-readers (e.g., Kindle,%) 27,0%
- Simulations, gaming, or virtual... 28,8%
- mp3 players 40,1%
- Online forums, bulletin boards 49,2%
- Communication and... 53,7%
- Video conferencing, web... 56,5%
- Online document storage and... 58,7%
- Tablets (iPad, Android) 60,0%
- Instant messaging (e.g., AIM,... 60,8%
- Personal website 64,4%
- Media sharing sites (e.g,... 82,2%
- Social networking (e.g., Facebook,... 93,3%
- Smartphones (e.g., iPhone,... 97,0%
- Email 98,1%
- Laptops/PCs 100,0%

Figure 7. Extent of technology integration into participants’ courses

- Technology is viewed as a useful tool by the majority of my instructors, and we are encouraged to use it 34,6%
- Technology is optional in most of my classes 10,0%
- Technology use is essential to success in all of my courses. It is fully integrated into teaching and learning 51,0%
- There is no use of technology at all in most of my classes 36,3%

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Skype (57%), communication and collaboration tools such as blogs and wikis (54%), and online forums (49%). Forty percent also use mp3 players on daily or weekly basis.

Thus, a significant proportion of the respondents do make extensive use of communication/collaboration tools in their daily lives. They also extensively use both mobile devices and laptops/PCs. By contrast, the vast majority infrequently or never use the following technologies: Remote access to PC, E-portfolios, MOOCs (Massive Open Online Courses), multimedia editing software, RSS Aggregator/Readers, e-books/e-readers, and simulations, gaming, or virtual worlds.

Figure 7 illustrates responses to a question requiring students to indicate the extent of technology integration into their courses. We can see that most of the students indicate that technology is utilized in their courses. Around half of the participants (52%) stated that technology use is essential to success in all of their courses and is fully integrated into teaching and learning, while an additional 35 percent noted that technology is viewed as a useful tool by the majority of their instructors, who encourage them to use it. Still, there were several students in our sample (11%, n=57) who noted that technology is optional in most of their classes, and a handful (3%, n=16) who stated that technology is not used at all in most of their class.

The extent of technology integration in instruction was measured by asking participants to indicate, using a 5-point Likert scale, the frequency with which their instructors use each of 21 different technological tools. Table 2 indicates the percentage of students reporting their instructors always or very often using each tool.

PowerPoint presentations are the only technology being regularly used by most of the instructors. Seventy-three percent reported that their instructors always or very often used it in their classes. By contrast, the majority of the participants indicated that their instructors never or seldom use most of the other listed technological tools (in parenthesis the percentage rarely or never using each tool):

- Simulations, gaming, or virtual worlds (94%)
- General-purpose software such as iMovie and Audacity (92%)
- Software for students to record and edit videos (91%)
- Prezi presentations (90%)
- Podcasts/audio files (88%)
- Clickers or other means such as electronic quizzes to obtain student responses in real time (85%)
- Lecture capture outside the classroom (84%)
- Standardized assessment tools to gauge student performance (83%)
- E-textbooks and associated online content (83%)
- Photo sharing (81%)

Table 2. Percentage of students indicating that their instructors always or often using each technological tool in their classes

<table>
<thead>
<tr>
<th>Activity</th>
<th>% of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>PowerPoint presentations</td>
<td>73%</td>
</tr>
<tr>
<td>Open-source (free) instructional material to augment content</td>
<td>42%</td>
</tr>
<tr>
<td>Online homework or virtual labs</td>
<td>37%</td>
</tr>
<tr>
<td>Classroom enhancement technology (e.g. tablet PCs, whiteboards)</td>
<td>36%</td>
</tr>
<tr>
<td>Video (in-class or streaming)</td>
<td>30%</td>
</tr>
<tr>
<td>Tutorials using screen captures and voice over/ Narrated presentations</td>
<td>28%</td>
</tr>
<tr>
<td>Videos of lectures captured in the classroom</td>
<td>25%</td>
</tr>
<tr>
<td>Asynchronous discussion forums</td>
<td>24%</td>
</tr>
<tr>
<td>Collaboration Tools (such as Skype or video) to encourage in class or real time interactions</td>
<td>23%</td>
</tr>
<tr>
<td>Synchronous Chats</td>
<td>21%</td>
</tr>
<tr>
<td>Collaboration Tools (such as Facebook, Twitter, or other social media) to encourage online participation or interaction outside the classroom</td>
<td>20%</td>
</tr>
<tr>
<td>Subject-specific software or applications (e.g. dynamic software for teaching statistics)</td>
<td>20%</td>
</tr>
<tr>
<td>Photo sharing</td>
<td>19%</td>
</tr>
<tr>
<td>eTextbooks and associated online content</td>
<td>17%</td>
</tr>
<tr>
<td>Standardized assessment tools to gauge student performance</td>
<td>17%</td>
</tr>
<tr>
<td>Videos of lectures capture outside the classroom</td>
<td>16%</td>
</tr>
<tr>
<td>Clickers or other means such as electronic quizzes to obtain student responses in real time</td>
<td>15%</td>
</tr>
<tr>
<td>Podcasts/audio files</td>
<td>12%</td>
</tr>
<tr>
<td>Prezi presentations</td>
<td>10%</td>
</tr>
<tr>
<td>Software for students to record and edit videos</td>
<td>9%</td>
</tr>
<tr>
<td>General purpose software (e.g. iMovie, Audacity etc.)</td>
<td>8%</td>
</tr>
<tr>
<td>Simulations, gaming, or virtual worlds</td>
<td>6%</td>
</tr>
</tbody>
</table>

Table 3. Students level of experience and interest regarding different models of online learning

<table>
<thead>
<tr>
<th>Technological Tool</th>
<th>Level of Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Completely Online Course: No face-to-face component. All content and activities delivered online</td>
<td>41.9%</td>
</tr>
<tr>
<td>Blended/Hybrid Course: The number of hours of face-to-face time is formally reduced and supplemented with online and out of class activities</td>
<td>19.8%</td>
</tr>
<tr>
<td>Flipped Classroom: Pedagogical model in which typical lecture and homework elements of a course are reversed</td>
<td>10%</td>
</tr>
</tbody>
</table>
Figure 8. Percentage of students Agreeing or Strongly Agreeing with each statement

- Subject-specific software (e.g. dynamic software for teaching statistics) or applications (80%)
- Collaboration Tools (such as Facebook, Twitter, or other social media) to encourage online participation or interaction outside the classroom (80%)
- Synchronous Chats (79%)
- Collaboration Tools (such as Skype or video) to encourage in-class or real-time interactions (77%)
- Asynchronous discussion forums (76%)
- Videos of lectures captured in the classroom (75%)
- Tutorials using screen captures and voice over/ Narrated presentations (72%)
- Video (in-class or streaming) (70%)
- Classroom enhancement technology (e.g. tablet PCs, whiteboards) (64%)
- Online homework or virtual labs (63%)
- Open-source instructional material to augment content (58%).

Students’ responses suggest that they attend courses where instructors tend to use technology as mainly a means of more efficiently delivering content and information. There seems to be low use of technologies that can promote more engaging, interactive, student-centered pedagogical approaches, such as simulations, gaming, virtual worlds, electronic voting systems, and media manipulation software. Similarly, despite the broad use of social media in students’ personal lives, their instructors rarely or never ask them to employ them in class. Most reported never or rarely using synchronous chats, asynchronous discussion fo-
rums, or collaboration tools to encourage in class or real time interactions, or online participation and interaction outside the classroom.

Participants were also asked questions on their experience and interests regarding completely online, blended/hybrid, or flipped classroom pedagogical models (see Table 3). As shown in Table 3, only 42 percent already had experience in attending completely online courses with no face-to-face component. A much lower percentage (20%) had experience with blended/hybrid courses, or with courses employing the pedagogical model of the flipped classroom (10%). Nonetheless, despite the moderate level of students’ online/blended learning experience, their level of interest in taking courses adopting such pedagogical models/course models is high.

Students having taken at least one completely online, or a blended/hybrid course, were also asked to indicate, using a 5-point Likert Scale (1=Strongly Disagree….5=Strongly Agree), their level of agreement with each of a number of statements regarding online and blended/hybrid learning. Figure 8 illustrates the percentage of students agreeing or strongly agreeing with each statement. We see that the majority feel as confident in their ability to perform well in an online as in a face-to-face class (64%), and consider the quality of the online course(s) they had taken so far is equal to the quality of their face-to-face classes (52%). Around six in ten respondents (59%), would like to see more online courses available at their institution. At the same, time, the majority of students still seem to have a preference for face-to-face instruction, since less than half would prefer taking a blended/hybrid course (45%) or a completely online course (41%), rather than a face-to-face course.

2.2.3 Video Usage in Instruction

Section 3 of the questionnaire sought information on trends and preferences in the instructional use of video content. The first question in this section, asked students to indicate, using a Likert scale (5=Always, 4= Very often, 3=Sometimes, 2=Rarely, 1=Never), how frequently their instructors engaged in each of a number of instructional activities in their courses. Figure 9 shows the percentage of students stating that their instructors always or very often engaged in each activity.

In-class lecturing is the only activity selected by the majority of students (68%). The percentage indicating that their instructors always or frequently played videos or audio files in-class was slightly less than 50 percent (45%), while only one-third or less noted that their instructors regularly use whiteboards, have students react to a video, use online lectures, have students visit websites in class, provide demonstrations, or take video in-class. Students’ responses suggest the persistence of traditional, teacher-centered approaches to teaching and learning, and less than optimal exploitation of technology.
Figure 9. Percentage of students stating that their instructors always or very often engage in each activity

Figure 10 summarizes participants’ responses to a question inquiring them about the frequency with which their instructors incorporate videos in their courses. As seen in Figure 10, a little bit more than a third of the participants indicated that their instructors make occasional use of videos (37% sometimes), while a third (32%) that they make frequent use (22% very often, 10% always). However, 30 percent noted either that their instructors either use videos rarely or never use them in instruction.
Figure 11. Class format(s) in which videos are being incorporated

<table>
<thead>
<tr>
<th>Format</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None of my courses uses videos</td>
<td>21.73%</td>
</tr>
<tr>
<td>Blended/Hybrid Course(s)</td>
<td>22.96%</td>
</tr>
<tr>
<td>Completely online course(s)</td>
<td>35.06%</td>
</tr>
<tr>
<td>Face-to-face course(s)</td>
<td>41.48%</td>
</tr>
</tbody>
</table>

Figure 12. Percentage of students whose instructors use videos for each purpose

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>As a part of an assessment</td>
<td>12.59%</td>
</tr>
<tr>
<td>None of my courses uses videos</td>
<td>17.53%</td>
</tr>
<tr>
<td>To introduce concepts</td>
<td>41.98%</td>
</tr>
<tr>
<td>To illustrate concepts</td>
<td>52.10%</td>
</tr>
<tr>
<td>To explain concepts</td>
<td>65.18%</td>
</tr>
</tbody>
</table>

Figure 11 shows the percentage of students stating that their instructors use videos in each course format (face-to-face, blended/hybrid, fully online). A considerable proportion (22%) indicated that none of their courses uses videos. When being used, it seems that videos are used more frequently in face-to-face courses than in other formats. Also, a relatively smaller percentage (23%) noted that instructors use videos to support blended/hybrid courses than to support fully online courses (35%).

Students were also asked to indicate how videos (e.g. from YouTube) tend to be used by their course instructors (see Figure 12). It turns out that videos are mainly used to explain concepts (65%), to illustrate concepts (52%), and/or to introduce concepts (42%). They are rarely (13%) being used as part of an assessment.
Figure 13. Percentage of students stating most of their instructors "Always" or "Very Often" show videos of each length in class

![Bar chart showing percentage of students stating instructors show videos of different lengths.]

Figure 14. Optimal length for videos shown in class by instructors

![Bar chart showing optimal lengths for videos.]

Regarding the duration of videos shown in class, most students indicated that their instructors tend to display videos of a short length, and rarely or never show videos exceeding 5 minutes (see Figure 13).

Looking at Figures 14 and 15, which show the proportion of students selecting each time length as the optimal length of videos shown in class and posted online respectively, it is interesting to note that while students do tend to like
short videos better than very long ones, many would actually would like the videos shown by their instructors to be a bit longer. Forty-one percent consider 10-15 minutes to be the optimal length for videos displayed in class, while another 11 percent prefer videos of an even bigger length. For videos posted online, students seem to prefer even longer videos. Seventy percent consider a length bigger than 10 minutes to be the optimal length for videos posted online, while 30 percent prefer videos that are longer than 20 minutes.

Videos seem to be widely used in instruction. As shown in Figure 16, almost
Figure 17. Percentage of students whose instructors show each type of video

![Bar Chart showing percentage of students whose instructors show each type of video.]

Half of the respondents (46%) indicated that they very often or always engage in course activities and/or assignments that are based on video(s). Another 32 percent indicated that they sometimes do engage in such activities. Still, 22 percent of the students noted that they rarely or never engage in course activities or tasks based on videos.

Figure 17 shows the percentage of students whose instructors use each type of video in their courses. YouTube or other ready-made videos, in either face-to-face (48%) and/or online/hybrid (46%) courses are the type of videos used most often. A sizeable proportion of students also indicated that their instructors record their lectures or mini-lectures and embed the recordings in online/hybrid

Figure 18. Device usually used to view videos posted by instructors

![Bar Chart showing the device usually used to view videos posted by instructors.]

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courses (39%). By contrast, only 11 percent of the students had instructors who recorded their lectures or mini-lectures in face-to-face courses. An equally low percentage (14%) experienced courses that incorporated guest performances/public screening of video.

As shown in Figure 18, students tend to use PCs to view videos posted by their instructors. They rarely use a tablet or their mobile phones.

Students were also asked to rate the quality of the captured lectures or mini-lectures (Figure 19), and of the audio files (Figure 20) that their instructors post
Most students whose instructors use captured lectures or mini-lectures seem to be generally satisfied with their quality, but think that there is room for improvement. Only few students rated the quality of captured lectures or mini-lectures used in their courses to be either great (6%) or terrible (2%). By contrast, students seem to be completely dissatisfied with the audio files posted by their instructors, with 84 percent rating their quality as horrible.

### 2.2.4 Incentives and Barriers to the Educational Use of Videos

In Section 4, which inquired about main incentives and barriers to the instructional use of videos and other technological tools, participants first had to indicate, using a 5-point Likert scale (5=Very Important, 4=Important, 3=Neutral, 2= Not very Important, 1=Not at all Important, how important they considered each of a number of reasons for using videos in instruction. Figure 21 shows the percentage of students rating each of the stated factors as an important or very important reason for using videos in face-to-face teaching.

The vast majority of students consider all but one of the listed factors as important or very important reasons for incorporating videos into the classroom. They indicate that the inclusion of videos in the classroom is important because videos can be watched over and over again and they can pause them to take notes, but also because videos can serve as motivational tools and as tools for introducing new concepts or better illustrating or clarifying concepts introduced in class. It is interesting, however, to note the considerably lower percentage of respondents rating as important or very important the factor “videos prepare me for real life settings”.

Figure 22 shows the results of a related question, which asked students to rate the level of importance of each of a number of factors for using videos for lecture capture and/or for recording mini-lectures. Obviously, students realize the power of lecture capture to broaden reach, enhance independent student study, and meet individual student needs (Elliott & Neal, 2016). Their responses are in accord with the research literature, which highlights numerous advantages to captured technology, including the ability it provides for students to access lecture/mini-lectures at a time and place of their convenience (Panther et al., 2011), and to easily rewind, pause and review recording as many times as they wish (e.g. Panther et al., 2011; Al Nashash and Gunn, 2013), thus acting as a particularly helpful aid for better understanding and/or revising the course material (Panther et al., 2011; Taplin et al., 2011; Elliott & Neal, 2016).

Despite their potential educational value, there are also some challenges to the instructional use of videos. Figure 23 shows the percentage of students that have encountered each of a number of stated issues/challenges in courses in which their instructors made use of videos.
Figure 21. Percentage of students considering each factor as an important or very important reason for using videos in the classroom

Figure 22. Percentage of students considering each factor as an important or very important reason for using videos for lecture capture and/or for recording mini-lectures
Figure 23. Percentage of students having experienced each issue/challenge in courses where their instructor used or attempted to use videos in instruction

Handling of technical issues by faculty and technical staff at their institutions seems to be the main issue/challenge experienced by students in courses where their instructors employed videos (see Figure 23). A considerable proportion of students (41%) argued that their instructors “do not seem to have adequate technology skills to handle technical issues regarding video use”. The lack of readily available administrative/technical support at their institution for the integration of videos or other educational tools into teaching and learning was also mentioned by a similar proportion of students (39%). About a quarter of the participants (28%) also stated that their instructors “seem to lack essential pedagogical knowledge of how to effectively integrate videos into instruction to benefit student learning”. Other issues encountered include the following: low aesthetic value, and/or poor video or sound quality of most of the videos used by instructors (28%), taking up of too much of class time due to long videos, slow video downloading, or buffering problems (27%), big length of lectures, and/or other videos posted online instructors which makes them boring to watch (27%), inability to view videos at home due to lack of internet access (22%), inability to videos because of technical problems in making, posting, or downloading (19%), language issues due to the fact that videos tend to be in English with no subtitles in students’ native language.
3. CONCLUSIONS AND IMPLICATIONS

Through a cross-national, in-depth survey of higher education students’ attitudes and practices, the current study has provided some useful insights into learners’ perceptions, motivations, and experiences regarding the employment of digital videos and other technological tools for personal and educational purposes. The study has also provided useful information regarding perceived barriers to the effective integration of videos and other ICT into instructional settings.

Findings concur with those of previously conducted studies, which suggest that most higher education students (and their instructors) have positive attitudes toward the educational use of videos and other contemporary technologies, considering them to be a critical aspect of the modern HE learning environment (Herrero et al., 2015; Dahlstrom & Brooks, 2014; Marzilli et al., 2014). Our study participants noted numerous benefits of technology that are well cited in the research literature (e.g. Bishop & Verleger, 2013; Eick & King, 2012; Ford et al., 2012; Gill 2011; Guy & Marquis, 2016; Taplin, Low, & Brown, 2011; Tobolowsky, 2007; Yousef, Chatti and Schroeder, 2014): increased motivation and engagement, more efficient delivery of course content, improved knowledge retention, promotion of student independence, personalization, differentiation of learning, etc.

At the same time, the failure of higher education institutions to take full advantage of the true potential of technology for transforming the nature of teaching and learning became obvious in our study also. The reported levels of use of different technological tools for educational purposes by our study participants, lagged far behind their levels of technology use in daily life. Similarly to other researchers, we have also found that most of the learners in our sample attended courses in which instructors used technology as mainly a useful aid for delivering course content and/or for increasing student motivation, rather than as a tool for transforming teaching and learning (e.g. Lei, Finley Pitts, & Rong, 2010; Marzilli et al., 2014). Most of our respondents, reported that their instructors restricted the use of technology to mainly representation tools such as PowerPoint, and made minimal use of interactive technologies (social media, simulations, games, educational software, and media manipulation software, etc.) that can promote student-centered, collaborative, and inquiry-based learning environments.

The research literature indicates that the introduction of ICT has brought new challenges for educators, adding a new set of variables to their already complicated and demanding task of lesson planning and implementation. Changing teaching practices is proving to be very difficult. Ample research evidence shows that it is much more demanding for educators to exploit the growing prominence of digital technologies and their transformative potential in instructional settings than was originally anticipated, and that many teachers remain unprepared to effectively employ ICT tools in their teaching practices (e.g.
Ertmer et al. 2012; McDonald et al., 2014). Thus, to further facilitate the proliferation of technology in HE establishments, institutions should promote a more supportive culture that brings innovative technologies to the forefront of faculty consciousness and facilitates their integration into instructional practices in effective ways that can help students to learn better, more efficiently and creatively, to innovate, to solve complex problems and to access wider and more up-to-date knowledge, both inside and outside the classroom. Higher institutions should support their faculty with appropriate technical and administrative resources that will promote the effective infusion of emerging technologies into teaching and learning. The provision of high quality professional development, in particular, is vital for generating the necessary changes in teaching cultures that will enable HE to reap the full benefits of ICT advances.

Despite the rich insights gained from the current study, more research is needed to further advance our understanding of students’ attitudes and levels of use of videos and other technological tools in instruction. A drawback of this study is the limited generalizability of its findings due to the self-selected nature and relative small size of the survey sample. To enable generalizations beyond the specific research setting, future iterations of the survey study ought to employ more rigorous sample selection procedures.

Future effect studies taking place in actual classroom settings (face-to-face, blended, or online) are also essential to help shed light into both facilitating and inhibiting factors to the successful implementation of videos and other technologies in formal learning settings. Research focusing on the actual integration of various technological tools, can offer faculty with valuable information on how to best utilize the affordances provided by ICT to motivate students, and to scaffold and extend their learning.
4. REFERENCES


Lei, L., Finley, J., Pitts, J., & Rong, G. (2010). Which is a better choice for student-faculty interaction: synchronous or asynchronous communication? Journal of Technology Research, 2, 1-12.


