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VIDEOKONCERENCE VE VÝUCE ANGLICKÉHO JAZYKA: VÝHODY A PROBLÉMY

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Thesis

VIDEO-CONFERENCING IN ELT: ADVANTAGES AND PROBLEMS

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Tato stránka bude ve svázané práci Váš původní formulář *Zadáni dipl. práce*
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Prohlašuji, že jsem práci vypracoval samostatně s použitím uvedené literatury a zdrojů informací.

V Plzni dne 29. června 2012 …….

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ABSTRACT

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The thesis deals with a topic of defining advantages and problems of video-conferencing as a method of teaching and learning. The subject of video-conferencing as a method of data collection is described on a concrete internet communicational client represented by Skype. The main aim of the research is to provide an information about possibilities of communication via video-conferencing and consequently to examine scales of a practical use of video-conferencing among the public, as well as their opinions on a possibility of using video-conferencing for the purposes of teaching and learning. The research is executed with ninety-four random respondents to a questionnaire in Czech language placed on the internet. Each of the respondents fills out the questionnaire. Data collected from the questionnaires are then statistically recorded and presented in form of diagrams, the implications of which are further analyzed with regard to certain number of limitations of the research. In the last part of the thesis, there are conclusions, implications of the results and suggestions for teachers as well as for the further research.

TABLE OF CONTENTS

1. INTRODUCTION

The topic of the thesis is "Video-conferencing in ELT: Advantages and Problems". More, specifically, the topic covers the computer communicational client of Skype and its features, particularly video-conferencing in regard to teaching and learning English.

My focus of the research was to provide an information about a current situation in using Skype as one of the best software for video-conferencing, in consequence of which I learned that there are very few printed sources which I could use. There were, however, many concrete electronic sources and remarks of developers which were relevant to my research. It was apparent to me that the internet communication is becoming increasingly popular among younger learners and also among people who use it for the purpose of work and self educating. In addition, I realized that all the most topical information about the Skype and its video-conferencing could only be found on the internet, thus the most important thing was to establish a basis of theoretical data about the program and subsequently define all the advantages and problems of its using with a help of those who currently use it.

Therefore, the aim of the research is to summarize all the relevant data about Skype and its features, the description of the main advantages and problems of video-conferencing in general and the usage of this knowledge in regard to teaching and learning English. Moreover, the research deals with the examination of popularity of Skype among participants of the survey, their field of usage of the application as well as their attitude towards using video-conferencing in the teaching process.

2. THEORETICAL BACKGROUND

What is VoIP?

The acronym stands for Voice Over IP where the IP means Internet Protocol. The VoIP then is a term that is commonly used for voice transition via data networks or the internet. Voice transitions in general do not require a very large capacity in the transitional link. Because of compression technologies, which are still advancing more and more, the minimal connection speed of 10 - 12 kbps (kilo bits per second) should be enough to meet the requirements for fluent conversation. With the connection speeds commonly provided nowadays, the voice data transition is but a small part that is being transferred.

A larger problem with the connection lies in the speed of response or so called "latency". Moreover, the overall quality of the connection is important. The latency number usually is defined in milliseconds (ms). If it is too large, or if there is a loss of data packets during the transmission this may result in a low quality communication or even in a lost connection. The protocols that are widely used in this matter do not offer the minimal level of quality of service (QoS). Another problem related to the VoIP transmission is the permeability of such data connections in terms of networks that are protected by the Network Address Translators (NAT). What is more, the communication process must deal with various types of firewalls and other similar protections when using the common types of protocols such as SIP or H323. Nevertheless, Skype is a kind of application that can actually circumvent most of these types of software protections, and this is another reason why Skype is so popular (Kuneš, 2007, p. 9).

What is Skype

Skype is a type of software that primarily allows people to make a voice communication over the internet. It functions on the basis of peer-to-peer connection. That means there is no need for the third (middle) user to make a mutual connection for the two who wish to speak to each other. The application is available for free on the internet web page www.skype.com, from where any user can download and install it on his/her computer. The essential function of the program is the voice communication between any two or more users. While there are other possibilities nowadays, such as social networks that allow the voice communication without having to install the application meant to this

function, Skype itself, whose history goes far deeper, is still a kind of software any user has to have installed if he or she wishes to speak trough it. The main advantage, compared to the social network voice communication mentioned earlier, is the fact that a user of Skype can use it to contact any person on standard phone line or even call people on their mobile phone. The program is regularly extended to have more and more functions, among which we can name for instance synchronization with other communication applications, push-to-talk functions or multi-calls, also known as videoconferences about which I will write in the next chapters. Calls between users by means of internet calling is free of charge. Only the other services such as the calls to phone lines and mobile phones are charged (Kuneš, 2007, p. 11).

While Skype is capable of providing the user with an instant messaging option, like many other similar programs such as ICQ, Yahoo or MSN, the primary function of Skype is voice communication. It also offers a possibility of sending data files from one machine to another or sending text messages to mobile phones.

Compared to Other Voice Applications

One of the main differences between Skype and other applications for voice communication over the internet is that Skype does not follow the usual client-server scheme, which was more common in the past. It rather prefers a communication called peer-to-peer which means it is not necessary to have a third machine just to connect the two users. However, this condition of a central operator must still be met. Therefore, the creators of Skype came up with the solution that every user is both a call participant and the central operator at the same time. Only, the architecture functions according to the model that no user is the operator for his own call. It is always someone else. As strange as it may seem, this model is less demanding on the hardware requirements of users and therefore does not require as fast an internet connection as the client-server model. This infrastructure also allows for exponential growth of the data traffic, which would otherwise be impossible. Another advantage of peer-to-peer or p2p model is that it allows one to use Skype on computers with higher security rules (Kuneš, 2007, p. 11).

The users who operate on machines which are not limited by internal firewalls or address translators, are superior to other more secured machines and therefore have more direct access to the peer-to-peer point, can provide others with so called router points. This also influences the data stream on the computer that provides such a point. This

transitioning of data traffic is maintained fully by Skype and cannot be influenced from the side of the user. All voice communication transferred to data packets is of course encrypted. Therefore, there is no possibility of unauthorized access to this information.

Despite the fact that Skype has a lot of competition these days, it has a serious head-start, and other developers of voice applications may find it difficult to uphold their products when Skype is around. There is only a limited number of those who need not to worry. For instance, we can name Google Talk from well established company Google, which might not have so many gadgets and communication tools included as are found in Skype, yet it already has more than enough active users because of its previously received fame as a web search engine.

Additional Skype Tools

SkypeOut

SkypeOut is one of the main extensional service of Skype. It provides user to be able to make a call on to any phone line or mobile phone around the world, if the user knows the number, that is. This service may be paid, however, the fees for these calls proved to be quite satisfactory compared to the prices of international calls from phone-to-phone (Kuneš, 2007, p. 10).

SkypeIn

I also will talk about a service that provides user with a personal number that is assigned to his Skype account, so that anyone can make a phone call to this number and communicate with him from phone-to-computer. Although it might be difficult to get used to talking to someone whose conditions are not similar to the one who is talking on the other side, it is a practical tool which not very many other applications provide (Kuneš, 2007, p. 11).

Voicemail

Another useful tool, which incidentally is widely used, might be the voicemail that guarantees all the voice messages that came during the user´s absence or offline status, or even when he or she was just calling someone else, will be stored for later hearing (Kuneš, 2007, p. 11).

History of Skype

The program was developed in 2003 by Niklas Zennstörm and Janus Friis with their headquarters in Luxemburg, who were also the authors of the Kazaa program, a well known applications for sharing files between users. In April of the same year, the first beta version of the program was released. The name itself has an origin in the previous entitling "Sky peer-to-peer" which speaks for itself, since I already explained the peer-to-peer function. In order to shorten the name, it changed to Skyper. However, this name was already taken. Later, it developed into the official name of Skype. Later in June 2004, the SkypeOut subprogram was released, causing shortly thereafter the release of the first official version of Skype, the version 1.0, which came one month later. Within just first three months, there were over 1 million Skype users online. In April 2005, over 100 million people have downloaded Skype. After next two months, the was a first Czech localization of the program. In October of the same year, there was a massive purchase in which the Skype was bought by eBay for $2.6 billion. A few months later, Skype introduced its second official version with a support of video calls. In that time, there were already over 100 million of registered users, wherefrom six million users were online. Moreover, there was a version 2.0 release for Mac (Kuneš, 2007, p. 11).

Also there was a release of Skypecasting that allowed users to record their voice calls. Unlike normal Skype, which ran on peer-to-peer architecture, Skypecasts supported the hosting of public conferences that could count up to 100 people and were suitable for panel discussions, lectures and other such public events. The development of Skypecasting was discontinued in September 2008. According to the official source, "Skypecasts was one of the many features we developed to enable conversations across the world. What we learned by watching how the product was used and through feedback we received was that Skypecasts wasn’t quite measuring up to our high standards and expectations for connecting and delighting our Skype community" (Skype.com).

In June 2006, a new version 2.5 was released. It newly introduced a support of sending SMS messages via Skype. One year later, there were other updates which came up with features such as Skype Find, Skype Prime and Send Money that allowed users to send money through PayPal using its synchronization with Skype. Other functions introduced in that year were the inclusion of the video in chat, auto-redial function or call transfer to another person or a group. There was also an update for Mac OS X users. To be concrete, the Skype contact list could newly contain the contacts from Mac Address Book. There was also an auto-redial update, a public chat creation and the volume slider now appeared in the video-call window. In August 2007, there was a Skype system-wide crash leaving users in many countries unable to connect to network due to an exceptional number of simultaneous logins caused by Windows patch reboot, also known as "Patch Tuesday". In the same year, the former founders of Skype, Niklas and Janus, departed leaving Michael van Swaaij in charge. His position overtook Josh Silverman and eventually it belonged to Tony Bates (Skype.com).

In 2009, Skype 4.0, with a full support of full-screen high quality video calling, was released. One year later, Skype announced its software´s integration with Panasonic, Samsung and Sony televisions with internet connection support. In May 2011, Microsoft announced the acquisition of Skype for $8.5 billion, leaving the purchase as the largest one in the history of the company. The Skype is now a division of Microsoft leaving its former CEO Tony Bates in charge as the president who further reports to Steve Ballmer, the CEO of Microsoft (Skype.com).

Installation of Skype

Skype Requirements

Although there have been some slight improvements over the past few years which resulted in higher requirements on the program, the following minimal configuration should be enough to meet them. The operating system of Windows XP, Vista or Windows 7 is a good way to start with on common PC. Then it is necessary to have the PC with processor of at least 1GHz frequency, hard drive of 15 MB reserved and the memory of 256MB of RAM at least. Mac users should have Mac OS X version 10.3.9 system with G4, G5 or Intel processor of speed about 800 MHz, hard drive about 100 MB and memory of 512 MB of RAM at bare minimum. In addition, users of both the PC and the Mac has to

have the important peripherals such as microphone and webcam. Both peripherals can be originally built in the computer. Nevertheless, it is better to use these as external devices (Skype.com).

Web Cameras.

When there is a built-in webcam it can provide the user with some more comfort, especially when on travels. One does not have to carry more peripherals except for the computer (when we do not count a recharger, a mouse and such things, obviously). On the other hand, it has several disadvantages which might have a negative impact on the quality of a conversation. Nowadays, we can purchase several types of web cameras that provide a light for themselves in order to fully enlighten the transmitted image. Some of them even support an infra-red type of light which can enlighten our face without blinding us. Therefore, those web cameras can operate in almost complete dark unlike their built-in colleagues that usually need an additional source of light since the light emitted by the displays usually are not strong enough.

Another problem might appear when we try to show the person we are calling something that is not in front of the web camera. Normally, we can usually move our laptop in case the thing we are trying to show somebody is mobile. Nonetheless, we can be working with the desktop computer that is we cannot relocate as well. Moreover, we could also want to present one thing while typing the other things. Also, we might require to have some comfort and communicate in sofa where the only possible solution of proper visible contact is to place our laptop with its built-in web camera as close as possible. There are also types of laptop that support a twistable display, so the user can see his keyboard while the called person is able to see things in front of the caller (Appendix C).

Nevertheless, an external web camera can be put on any place around the computer with adjustable range from the viewed object (e.g. our face). It can also be relocated easily to desired position, so that it can transmit in detail exactly what the caller wants to show the receiver. Some web cameras even come with a sophisticated software that allows us to digitally create interactively moving objects attached to our face such as hats, blindfolds, sunglasses, wigs, and other things during our conversation. Those can be used either as symbols/exaggerations of our current mood or as symbols of our live profile (Appendix D).

Headset with a Microphone.

An external microphone usually serves us best for the means of voice communication when attached directly in front of our mouth. A device that provides us with that attachment is called headset. It comes in two main versions. One consists of earphones and the microphone that is in fixed position next to our mouth. The other contains just the microphone. When we prefer this alternative we must keep in mind that we need some speakers in order to hear the other person´s voice. These are usually built-in our computer and provide satisfactory quality for us to understand. Therefore, unless we want our conversations to be private, we can use the computer´s built-in speaker system.

Downloading the Program

In previous chapters I mentioned that Skype is available for free. Therefore, it is not installed through CD or any such media. In order to use it, one has to download it from the internet and install it first. It is recommended that any application should be downloaded from its official web page. Skype in not an exception. Also, with the officially released product it is always assured that the version is the most topical and therefore, it can be expected that some bugs which might have occurred in previous versions would be dealt with in the newer version. However, many parallel web pages do not offer their own beta versions of Skype, but rather direct to the mother page. The official web pages can be found under the appropriate domain www.skype.com from the year 2003. If we go there, out web browser usually determines according to our system preferences which language we prefer and load the appropriate page aberration. The user can also cycle between more than 15 languages. We usually can spot the button which sais "Download Skype" right on the index page (it is the first one that will appear after we go through the link). Before we actually download the application, we can choose on which platform are we going to use Skype. Currently, user can use download the version for Windows, Mac OS X, Linux and even the special versions for PocketPC and mobile phones, which is widely used these days. The size in Mega Bytes of the install package that user has to download in order to install it is still growing. However, with the ADSL/DSL connection and CATV connection that stands for telephone lines and cable television lines that are very frequent the download is a matter of a few minutes. The EDGE and GPRS connections that are used by mobile phones as the means of connecting to the internet are much slower than the already

mentioned connections. Nevertheless, the install packages for these mobile devices are considerably smaller, so the download is not going to take too long either. The icon which says "No Spyware, Adware, Malware" ensures that the program does not contain any such parts that could endanger the privacy of potential user or damage his computer (Kuneš, 2007, p. 14).

Program Installation

After the downloading, we need to search for the installation file and launch the installation. Because we are going to install the application whose proper running is dependent on the internet connection, it is highly recommended to be on-line before starting up the installation process. I personally advise to exit some programs running in background of the computer which are not needed at the moment to ensure the maximum performance and thus the minimum time taken by the installation process. In addition, I recommend to check the battery status for any critical values. Running the installation process and not finishing it due to low battery status on a laptop may cause permanent damage of the system tools which could also result in crashing the whole operating system.

When we are ready, we can launch the installation file that we just had downloaded. The installation process itself is separated into several phases which are lucidly arranged and described. User then has to just follow the instructions on screen and be done with the installation within few minutes. On computers with Windows operating system we may encounter some warning messages during the installation. Those messages warn us about the possible danger of viral infection of our system. Nevertheless, since we downloaded the program from the trusted source, we may skip those warnings and proceed with the installation. A firewall that is part of many system´s protection against the threads from the outside network is likely to be active on the machine on which we are currently installing the Skype. Therefore, after the installation, when we first launch the program we will probably need to unblock the shield that is preventing the Skype from transmitting and receiving any data from the internet. Windows users are usually asked about this the first time they run the Skype. Others - Mac users, for instance, do not need to trouble themselves with such warnings as the Apple products use strictly their own alternatives of applications and therefore, there is no possibility of some malware or other infection (Skype.com).

After we pass the first phase of the installation which is the choice of the language of the installation and the program itself, we have to agree with the terms and conditions of using by means of checkbox. Then we choose the desired destination on our hard drive where the program should be installed. It is advised to keep the path offered by the installation program unchanged. Shortly thereafter, we just wait until all the files are extracted and the installation process is finished.

Registration of a New User

Before we first launch the Skype that had been installed on our computer, we are asked to register a new user. If it the first time we are using Skype or if we forgot the sign up information to our previous Skype accounts for some reason, we may want to proceed with the registration. That will take us only a few minutes. Otherwise we will not be able to use the program, since its architecture requires some sort of profile under which the user can present himself to other users he or she wishes to communicate with. The two main fields that are essential to fill out are "Skype name" and "password".

The Skype name is the unique name under which we will be seen online to other users. It could be our own name or any other name that we prefer. However, it has to be at least six characters long and it should begin with some letter, not a number. Moreover, it must not contain any spaces. Other IM applications such as ICQ have another type of user identification - the Unique Identification Number (UIN). This number, however cannot be chosen by user which has several some advantages and also some disadvantages. Every user name has to be unique to characterize the one and only one user. Therefore, there cannot be two same numbers when talking about ICQ or names when talking about Skype. While most people are not concerned which number will they be assigned to (ICQ), many people wish to have as simple name for Skype as possible. The identification number is hard to memorize. On the other hand, a Skype name can be as simple as "Andrea" or "Dominik". Since every user has to have the unique name, however, it leaves users to decide what characters they want to add to their newly created user name, so that it will become the name that have not yet become occupied in Skype database of names and still be easy to remember. With every new user of Skype, it is more difficult for him to think of some unique user name then. Nevertheless, the authors of Skype knew that this problem might emerge eventually and came up with a satisfactory solution. Users may not be able to get their unique Skype names for their profiles when they sign up, yet, they may

override this name when it comes to its presentation for other users. In reality, any user can fill in his or her desired name which will then appear instead of their usernames when talking to other users. This name also became apparent when the user is searched by someone else (Kuneš, 2007, p. 18).

The password, which is the second thing we have to memorize in order to get to our Skype account, should be as much complex as possible in order to be less traceable for other users who work with the same computer. Unlike the Skype name that is to be visible among other users and therefore traceable, especially by those who look for our name on the internet in order to contact us, the password is just for our own confirmation. Therefore, we should take in account that we write it down somewhere and never tell it to anyone.

Then, we will probably be asked to fill in the confirmation email. It is useful in case we forget our password. The Skype will have our email assigned to our account and when that happens we can request sending the forgotten password to our email. If we skip this option, we will have to contact the technical support of Skype in case we forget the password. Next, we are asked to check whether we want to receive Skype news and offers to our email and more importantly, whether we want to sign in after the Skype´s start up. This function will cause immediate sign up without having to fill our Skype name and our password. This option should be left unchecked unless there is only one person who works with the computer**.** After completing these forms, we can finally click on the "sign up" button which will turn our status online and able to contact other users.

Using Skype

It might have become apparent that Skype´s architecture is not only such that we will communicate with someone right after we launch the program. The program itself is sort of an universal platform that is available for use to many users who work with the same computer. Upon its start it always asks us about our sign up information, thus our Skype name and the password. Therefore, another user who wishes to use the same Skype application is able to fill in his or her own sign up information to the fields and connect to online status. Because of that, every time we turn on our laptop, the Skype application will erase the sign up information of previously signed user in order to keep his or her privacy secured. Our only option is to memorize our Skype name and our password, so that we can fill them out upon every sign up, or we can turn on the option "Sign me in when Skype

starts". By doing so, we no longer have to fill in our information on every start. However, there is a risk that some unauthorized person might have access to our contacts and Skype information from our computer while we are not present. I will talk about privacy in details in separate chapter thereinafter.

Upon the first launching of the Skype with its properly filled up sign up information, we might notice the green icon in our taskbar. By default the Windows users can find it in the bottom right corner of the screen. The green colour represents that we are online and available to speak to other users as well as that we are visible to those who have us added to their friends. This "online" status can be changed at any time to other statuses available.

The default window looks similarly as in other applications for instant messaging. It usually appears in the top right corner and serves as the list of our contacts. Those contacts obviously do not appear by themselves at the very beginning. It depends on our decision which users - colleagues or friends will we add to this list. Once we add them here, we can easily click on any contact in order to call that person. Of course, such as ourselves, the others will not be available to call anytime. We can tell whether they are online from their status which they share with us just as we share our status with them.

The first contact that will be visible in the mentioned list is the Skype Call Testing. It is the artificial contact provided by Skype for the purpose of testing whether our calling preferences are set correctly. If we try to call that user, we will hear a message similar to mailbox which will then allow us to record a short message that will we replayed to us afterwards. This way we can check our sound quality - thus the quality of incoming speech as well as the microphone setting, which involves the quality of our speech transmitted to other people. We might also want to check the other preferences of Skype to make sure the quality of calls will be as best as possible (Kuneš, 2007, p. 20).

Internal Audio Settings

Since the beginning of a development of the program the proper quality of calls have not been always assured. The fact still remains, because the proper quality does not only depend on how well is the Skype designed, but rather on several other conditions. One of them is the speed and stability of the internet connection. Another might be the environment in which the conversation takes place. This includes the acoustics of a place where a calling person is during the conversation, the disturbing elements caused by

parasitic sounds made by other sources and also some places causing low signal - all these could render the calling person unable to properly communicate with the person on the other end. What is more, we may encounter a low quality call because of using cheap microphone or earphones. Either one of these peripheries can lack of intensity or quality of a transmitted sound. (I will talk about the two peripheries in next chapters in more closely) Nevertheless, Skype can handle some minor problems of such type on its own. Therefore, I will now talk about settings that Skype has to offer for the purpose of increasing the quality of calls.

Apart from some other add-on applications, available for free on the internet, which might help us in reaching desired quality of calling, Skype consists of few basic settings that are useful and may solve many sound problems. For example, we might find the person calling us to be too silent or too loud, so that we can hardly distinguish some words which he or she says. It could also be us whose voice is hard to hear or otherwise.

If we wish to manage those settings, we can find them in "audio settings" which is a part of "options" that roll when we click on "tool" in the main window. It is worth noticing that Skype does not override system´s preferences with its own settings. It rather synchronizes itself with the system´s volume controls. We might also say that through Skype we can actually modify those volume preferences of our operating system and vice versa. Thanks to this synchronization, Skype has immediate access to other active applications and if there is any other audio-based application such as video or music players, sound programs or even computer games. This way, it is possible to control the volume of all those programs when needed. In praxis, Skype is constantly reading the master speaker volume of system as well as the volume of other sound applications and if there is a incoming call, it lowers the volume of other active applications to minimum, with an exception of itself obviously, so that we are able to answer that call without having to shut down all the audio-based programs manually. This serves us both way, because we can continue to listen to the music in background and the person who calls us can also hear it. Therefore, we can easily turn the volume of the music up for him to understand the words of a singer. Or we could as well be listening to some audio records with a native speaker talking. Otherwise, if the system shut down all the other applications in the moment we have this call, then we would have to search for the audio texts all over again.

As I mentioned earlier, we can modify the microphone and the speakers settings through Skype´s "audio setting". If we open that window, we can notice that Skype has its own automatic variation of how to control those settings. Therefore, we only should turn of

the function "Automatically adjust speaker settings" or "Automatically adjust microphone settings" when we are certain that these are not set properly. Anyway, turning off this function is the only way of how to change these settings in Skype. Moreover, we can always return to the automatic modes. As is shown in the Appendix E, there are two scales wherefrom each contain one slider. The first, a microphone scale, shows the volume of the active microphone associated with Skype. In other words, it shows us how much is this microphone sensitive to outer sounds. The more to the right the slider is, the more sensitive the microphone is which also results in larger volume. The other scale represents the volume of active speakers associated to Skype. It tells us how loud will be the voice of person who calls us. In case we use an earphones as speakers by default, then the scale shows the intensity in respect of those earphones.

One way of testing our sounds and the microphone is available right here in the audio settings menu. Particularly, the means of testing are managed by those two scales that also serve as indicators of volume. In order to test the first one, the microphone slider, we have to turn on our microphone associated with Skype and try talking into it while checking our voice changes represented by green bar that should appear during the time of our speaking. If there is any mechanical volume changer on the microphone or earphones that is part of it, we might want to turn it to the maximum, so that we can see the green bar more clearly. The volume of speakers can be similarly tested by checking the green bar. In this case, the green bar appears any time the master volume detects some output audio signal. For example, we may check the speaker volume by playing any music or sound in the computer by means of any video or audio player. We can also have the interception of our microphone turned on, in which case we can hear from our speakers what we say into our microphone. This function would, however, disturb the actual conversation between us and the calling person. Therefore, this option should be turned off in any time.

Adding a New User

Before we are able to speak to anybody through Skype, the person have to be added in our contact list. To do this, we have to click on "Add a contact" button in the contact list or main window. Fortunately, it does not have to be person who actually has the Skype account. Thanks to the SkypeIn and SkypeOut services, we are able to contact users just by knowing their phone number. Therefore, after we click on "Add a contact" button, we have several options of how to search for the person we are looking for. The first one, and

probably the best way to find that person is to enter his or her Skype name which is the name the user chose as his or her identification in Skype database.

Another method could be to find the person according to his or her email. Of course, many people use more than just one email client. However, only one can be assigned to Skype account. This is accomplished during the registration or it could be changed any time in Skype preferences or even via online editing, as every Skype account is also presented as unique web page through which we access our personal information that we entered during the registration. One of the most common email clients in Czech Republic is Seznam. Others well known can be Yahoo, Hotmail, Tiscali, Atlas or newly wide spreading client, Gmail. I purposely mentioned this information, because the email client that appears after the at-sign in email of any person can give us a hint from where the person is. For example, if I search for the user whom I only know by his name which is "Gomez" for instance, then the search engine could enlist two or more Skype users, wherefrom each represents himself as "Gomez" and does not have any further information visible, except for their emails. The email could be obviously unknown to us, even the one from the person we are looking for. The first Gomez´s email is, for instance, "gomez66@yahoo.com", while the other one has the email of "gome.z@seznam.cz". In either case, we cannot tell which is the right person we are looking for at the moment. Nevertheless, since our target is the person from Czech Republic, we can easily decide according to the email client who is the right Gomez. In fact, contacting such a person might be the only way to determine his real identity in case there are insufficient information about him in the search engine. Most people who Skype from time to time, however, do have their profile data filled in. Therefore, mostly we can tell right from the initial search whether we found the right person or not. Nonetheless, an email as a part of registration functions primarily as an emergency service for its owner to be able retrieve his or her lost password to Skype. Its usage in Skype is optional. Because of that, we might not be able to find our contact through means of known email (Kuneš, 2007, p. 26).

Therefore, there comes yet another indicia that might help us find our desired contact. I am talking the possibility of finding the person through the knowing of his or her full name. This information, however, is considered by many users as an act of intervening of their privacy. Many consider entering their full name to be irrelevant for their needs and rather stay unknown, visible only for those whom they had given their profile information. This applies on people who use Skype mainly as the means of communication with their

relatives. We are talking about interactions that are not so formal, thus there is no need of putting there too many information about people who know each other well.

The last option which remains is the search according to the phone number. It is possible, not likely however, that the searched contact had put his or her phone number as a part of the profile information. In that case, the search engine is likely to find the registered Skype user, when we search him or her just by the number. If it happens, we will probably prefer to contact that person not through the phone, but through Skype, which is free of charge. Nevertheless, if the phone number or contact, for that matter, does not exist in Skype´s database of contacts, then the search engine will not add the contact as the registered user of Skype. It will label it as an outside contact (not a member of Skype), which we are able to call only through SkypeOut function then. That is, however, a paid service. Therefore we will need to have some credits on our profile in order to make such a call.

Either one of these criteria can help us in our search. The search engine enlists all the users who have in common all the indicia that we had filled. Thus, if we input just the name "Novák", it will show all the users who have "Novák" in their name field. From the additional information to these people, we can then easily identify the concrete person we are looking for (Kuneš, 2007, p. 26).

Skype-to-Skype Calls

Once all our references are set and there already is someone online in our contact list, we can call that person. By clicking on that contact and additional window will appear and the person whom we are calling will be noticed by phone ringtone about an incoming phone call. This incoming phone call can be accepted or declined just as with classic phone. If declined, the calling person will receive a message that his call has been declined. On the other hand, once the phone call is accepted, both devices with Skype will start transmitting sound in both ways - just as in normal phone conversation. So the two participants do not have to switch between over and over for both of them to be able to speak and listen. This transmission takes a lot more data through the upload and download than in written conversation, also known as chat. Nevertheless, the voice communication itself is not so demanding on connection speed in general if we consider connection speeds these days. As has been said earlier, the latency is also important. If it is too high (e.g. over 80 ms), the conversation might have some lagging and shuttering problems rendering

communicants unable to understand each other. However, the values of latency this high, and sometimes even higher, occur mainly in cases of satellite connection.

The duration of any calls depends only on how long do the communicants with to talk to each other. Although there may occur some data losses during the conversation, the quality should not drop due to the enhanced durability against such losses. If the call is not answered in time, the called user will be notified of missed call in taskbar. All calls are furthermore listed in history section. That way the user can also revise the history of calls and find out at what did the call occur, for instance. In middle of any call, it is also possible that either one of the communicants will receive yet another call. In that case, it is possible to hold the first call in order to take the next call, as long as the participant of the first call on the other side is willing to wait. These functions become available only at the time of some call.

Another useful feature available during the call is the "mute the microphone" function which ensures that the user on the other side cannot hear the other one while still able to talk. This function is useful particularly when the first user needs to deal with some business and is unable to talk to the person on the other end at the moment, for example, when some real person talks to him. By clicking on the "mute the microphone" function again the conversation progresses without need of making the whole new call.

The call can be ended anytime by clicking on the red phone icon either in the contact list area or in the active window associated with that particular call which appear when making the call.

Chat as the Written Conversation in Skype

Chat is one of the most common ways of communication between people on the internet these days. It is also much less demanding on connection speed than the voice communication or video conferencing. Therefore, the authors of Skype did not have much problems including such a feature in their program. Probably the most significant advantage of chatting when compared to emails, which is also written communication, is that the conversation can take place in real time. The users may not be able to see each. However, they can instantly react by sending their messages to each other. This way, the conversation is moving forward much more swiftly and therefore, it can include even the acts of emotions that are felt by either of the participants at a given time during the chatting.

The chat communication in Skype looks similarly to the ones of other chatting applications. It consists of two windows horizontally divided from each other wherefrom the upper one shows the history of what has been written and sent by all the chat participants, while the lower one serves as the field for the user to write his or her message and send it afterwards. For better convenience, next to each of the two windows are the names and profile photos of the participants. Those can be set in the Skype preferences. Each user sees his or her photo next to the writing field, while the other user or users participating in the chat have their profile photos visible next to the history of conversation seen by all. Every user is also allowed to invite more participants into the proceeding chat by clicking on plus sign in the chat window. The overall count of users who can take part in one and the same chat is not limited. It can even be given a topic which is useful when the user who started the chat leaves with the assumption of continuation of the discussion. In reference to this, a various groups of users with set topics can be created in order to ease the preparations before each start of the group discussion. Those unique long term open discussions can be saved among favourites and even be given a profile photo that characterizes it (Kuneš, 2007, p. 44).

Before many other instant messaging programs started to use voice communication and even video call options, they primarily offered just the chat function. Despite its popularity, which was considerable over the years, it lacked the eye contact and the possibility of hearing the other person´s voice, which is also very important feature. Not to mention that the chat was useless for blind users.

In case of Skype, however, the chat itself was not considered a primary conversational tool, but due to its unique attributes that even the voice communication could not provide, it servers rather as a powerful enhancement of the voice communication. This way users do not need to spell the web pages they want to show someone, their emails, names of things through speaking, while the other users would have to write those spelled words down in order to understand. They just send those information in written form through the chat. Even in case someone wants to share his email, he does not need to forward it to his friend on Skype while this friend of his would have to wait and a do much clicking. It can be easily drag-and-dropped and sent in the chat window.

One of the other options is to participate in group discussion while making separate phone calls to individual users. Thanks to multi-tasking function that allows doing several operations at the same time, each user is provided with limitless of simultaneous combinations of communication. It opens even such possibilities as taking into account

two or more users working at the same computer at the same time. For example, one might be participating in the group discussion debating about the cognitive neuroscience of swearing, while the another person sitting next to him or her can be using a headset in order to discuss the actual impact of hearing taboo words in different languages through the voice communication. Therefore, the two people sitting next to each other can supply each other with an additional information about the topic almost instantly. And in my opinion, that kind of communication can be almost as much effective as in case of actual conference in person.

A "Send File" Option

One of the greatest features of Skype that could be taken as an enhancement of the chat window is a option of sending files. I am purposely talking about this as the enhancement, because when we use Skype as a tool of data collection or sending and receiving materials in terms of teaching, it is often required that one is allowed to forward some kind of texts. Either these texts are sent from the side of teacher who wants student or students to read them and write an essay on them afterwards, or they can be sent from students to teacher for an immediate skimming or correction. However, many such texts contain several pages. Therefore, it would be very inconvenient to read them right in the chat window. Not to mention, that a formatting of these texts is usually also important. In order to send them in their original form, it is possible to submit them as files through the "send" option in the dialog window. Lately, the engine of sending or sharing files has become so simplified that it is possible to send files by method of drag-and-drop where all we need to do is hold down the click button on the item or items we wish to send and drag them into the Skype contact window. After that, unless a firewall or proxy server denies it, the user on the other side can receive them. The drag-and-drop function is available to both PC and Mac users. We can as well send pictures, sound and music files, tables from excel. Even video file can be sent. The most important is the size of the file. As long as the connection speed is satisfactory, we are allowed to send almost anything including the whole programs of films. When I said connection speed, I obviously meant the speeds of connection on both sides. Therefore, the side that is about to send something to the other side will be uploading its files, thus the speed of a download is not important for this side at the moment. On the other hand, the side that is about to accept the files would be interested in its download speed. Therefore, the user on this side should not have opened

too many other internet web pages and programs based on an internet connection. As long as the files of a size under approximately 3 MB are sent the process should take only a few seconds. However, when there is for example a speech recorded in a sound file, then it will take considerably longer time. In case of sending a video presentation, recorded discussion or some short educational movie, it could take several hours. For this reason, it is better to use sharing desktop feature instead. The process of transmitting cannot be disrupted, otherwise the processed file will not be sent. Then a whole new transmission of the previously unfinished file has to be initiated.

The option of sending files is not new in Skype. Many other instant messaging programs such as ICQ, Yahoo or MSN offer the very same feature. Nonetheless, in case of Skype this feature has always been much more useful because of its other tools of communication. There is always an option of sending files through email. It is up to user which program suits his/her needs more. However, there is a slight difference between those two options. If we send the file through email when we currently are not talking to the person to whom we are sending it, we will not be sure whether the person is alerted about the incoming email. If we send it through Skype, the data transmitting will not start unless the recipient is online and accepts them, assuming that the feature "automatically accept files" is turned off. Therefore, after the sending is completed, we can be sure that the recipient knows that we have sent him/her something.

Security of VoIP Communication

Many users indisputably believe that calls which go via Skype can be monitored by a third party and therefore it is a high probability of a data leak. Truth is that the data travel through the internet from one user to another and as such, they carry information which has been encrypted. Let us examine further how effective is this encryption and what other factors influence the security.

The overall security of Skype depends on various factors. First of all, it is a security of the computer on which the client is running that is important. Secondly, there are various kinds of networks with different levels of security over which the communication can proceed. Lastly, Skype´s own system of security is hard, if not impossible to analyze, because it is being purposely hidden from public sources. According to Garfinkel (2005), "...because the Skype protocol is both proprietary and secret, the only sources of information are statements from the company about its security and what can be found by

reverse-engineering the software" (Garfinkel, 2005, p. 4). And Garfinkel (2005) further continues: "...because the Skype program can update itself every time it runs, the security over the overall system can change without warning or even a change in appearance" (Garfinkel, 2005, p. 4).

Developers of Skype claim their system of security uses the RSA encryption for key exchange and 256-bit AES as their bulk algorithm of encryption. That is all that can be traceable from the official site. Garfinkel (2005) examined the system of data traffic through the internet protocols and described a following explanation. In his words:

> An analysis of the packets sent between Skype clients indicates that a combination of protocols are used for registering on the network, searching for other participants, and performing a voice telephone call. The program appears to use a version of the HTTP protocol to communicate with the Skype server “ui.skype.com” (apparently located in Amsterdam) to perform username/password authentication and register with the Skype directory server. A modified version of the HTTP protocol is used for communicating with other Skype clients. Finally, an encrypted, proprietary conversation is used for transmitting voice, instant messages, and files. (p. 5)

In conclusion of the Skype and its VoIP security that it uses, we can say that it is protected from most of common attacks. Even though, there may be a way to break Skype´s security, it is still not very probable. Moreover, if there was, however unlikely, a data leak during a video conference lecture, there would not emerge any greater risk than when we send a number of our credit card via Skype. Also, a probability of sneaking somebody in classroom where a lecture is given and recording what teacher sais is much bigger than the probability of successful hacking into Skype in order to get to the same information.

Video Conferencing

Advantages of Video-conferencing

To paraphrase Laurillard (1993), videoconferencing can be described as "One-to-many medium, making it a sensible way to provide access for many sites to a remote academic expert" (Laurillard, 1993, p. 166). It is still matter of a discussions, whether a video conferencing should be more included into the process of education in schools. It has several advantages when compared to a regular teaching method which requires a presence of the lecturer and the students in the same place at the same time. In the following part, I will try to describe the most significant advantages that the use of videoconferencing can bring.

One of them is the option of holding a lecture for far more students than it would be possible in standard form of teaching. There is a simple argument for that. Let us say, there is five hundred students who are to attend the lecture. The first problem would be the choice of a room that would be big enough to host that many students. Second problem I see is in an acoustics. Even in the classroom that holds 30 to 40 students, it usually is a problem for some to clearly understand the lecturer. In our hypothetical classroom that has to hold 500 seats, the chances of all the students being able to understand what lecturer says are slim. Therefore, in classrooms that big, a lecturer usually has a microphone and a data projector available. Also more than few speakers had to be installed there accordingly. In addition, there must be a flow of circulating fresh air, a good view on board from all the seats and perhaps some electricity plugs for students´ laptops. When we think about it, a classroom that big is really financially demanding, thus it not that frequent as smaller classrooms. Now, there usually is one or two big classrooms in university campus. Still, there often is more than a few departments who have to take turns in the opportunity of using them. Because of that, there is a cluttered schedule with long waiting list for them. On the other hand, with the use of video conferencing there is no need for any classroom at all. Just some provisional conditions should be set for all who wish to attend the lecture if that is necessary. Nevertheless, each student can easily connect via internet in order to participate in the lecture from anywhere. It could be from home, café, work, even from the airport if the students has access to wifi. If the teacher insists on students´ attendance, there might be some interactive tasks for all the participants that must be fulfilled during the set time. Or they can monitor students´ attendance by creating participation logs that must be

checked by the set time before the lecture starts. Moreover, it could be a combination of both in which the lecturer creates a small quiz after the lecture with a limited time for finishing it. A time that should be sufficient for those who have just taken the lecture, but not for the rest of the students who were not connected.

Another relevant advantage is that one can give lecture via video conferencing for students regardless of their current location. Many good teachers such as David Crystal are invited by many universities to give their lecture there for the local students. These kinds of teachers thus have to travel around the world spending most of their free time on their travels. Such time could be used for preparing their lessons more conveniently without so much pressure. However, even teachers are human beings and need to relax from time to time. Personally I would say that their need for rest is more than adequate given the time they spend while preparing their lessons. In case of a video conference, things are much easier, because the expert who is to give the lecture does not have to travel to students. He can use all the time he needs for his personal matters and for the preparations of the lesson. He or she just spreads the time information when the lecture takes place to students, then the students log into the video conference from any location they may find suitable for their study needs and the lecture can be initiated (Knipe & Lee). According to Dallat et al. (1992), he questioned both lecturers and students before and after the video conferential lecture and learned that it indeed saves time and cost. Moreover, it was proved that the university which welcomes the approach of using these new methods of teaching is likely to enhance its public image (Dallat et al., 1992, p.).

That brings us also to the matter that everyone needs his/her own environment which suits them best for their concentration. Some people like to listen music in the background, supposing there is not any lecture of phonetics that would otherwise require silence in order to be more comprehensible. Some students would need to feel a security of the environment they are familiar with to give best performance as students who receive information. Perhaps, some are social types and would welcome to have some additional peers to be with them while attending the lecture so that they can immediately discuss what the teacher is saying without actually disturbing the teacher with their chattering. All these sorts of modification of "classroom" are in my opinion very important aspects which might significantly influence the students´ concentration on the subject, participation in class, their cognitive skills and even prolong their ability of required perception.

Next advantage lies in a possibility of recording the lecture. It rarely happens that an expert does preparations for a lecture keeping in mind that he/she will only use the

preparations for that one particular lecture. Usually, teacher is to give students the very same lecture over and over. Either, there are so many students that the same lecture must taught separately for smaller groups in different times, which causes that the teacher must be available for spending twice more time teaching, or the lecture is so well prepared that it can be reviewed by younger learners who undergo the same seminar next year. In either case, there is an opportunity for students to view the one recorded lecture at any time, as long as teacher does not mind their attendance in the seminar (in our case, the participation in the video conference). In praxis, it would look like an ordinary lecture of an expert recorded in a single video file. This lecture would actually be the footage of a videoconference, where students who were online at the time of the lecture participated. However, the one that would be recorded in the video is the expert who gave the lecture only, not the students who listened. By doing this, there would not arise any offending situations of students being recorded against their will. Given the fact, that all the important lectures were held with a use of video conferencing, literary every single lecture could be simultaneously recorded while in progress. If that those criteria were met, there would not be any need for the teacher to give the lecture several times for several other groups of students. Moreover, there would not be any more demands on classroom since the lecture were to be given only once. From economical point of view, if more than one subject were to be maintained via video conferencing, during the one semester time span, there would be significantly less financial spending on electricity and heat energy due to no present attendance in classrooms. What is more, school would not need to pay high taxes for renting additional places for teaching purposes.

There is yet another good reason for preferring video conferences in teaching methodology. Any good teacher makes notes about what he/she said in which class. This contains information about tests, terms for students´ submissions of their papers, etc. However, I experienced many situations where some information that teacher mentioned to a first group of learners were not told to another group of learners while both of these groups were supposed to take the same amount of information. It often happens on high schools where one teacher gives the same lecture to several classes. Nonetheless, no lecture is utterly similar to another lecture even when proceeding according to the same concept of materials. Tests which then are designed as a part of the assessment are, however, same for all the classes, and that applies even for most of students who have the same subject at the same year at universities. In case of university studies, there remains the fact that students are supposed to collect materials for studies themselves, thus not

knowing something is more considered to be a problem of each student. However, in case of high schools, the deal is more serious and the fault is not only on students´ side, but also on the side of teacher. When taking video conferencing into account, it is more convenient to have a control over what has been said in lecture. Moreover, if there is only one lecture held for all the groups, one can be sure that all the students have similar notes including similar approach to each topic discussed in class. Therefore, assessing their knowledge according to one universal assessment tool then is more reliable, given the fact that there is no group of students which was given different sort of information, or even that they lack of certain piece of information.

Disadvantages / Lectures vs. Seminars

Apart from the good points that were just listed above the use of video conferencing also brings several problems which have major impact on the effectiveness of teaching. As Freeman (1998) states, learning activities are not improved via video conferencing. It happens far too often that a pace in which the lecture goes on is much slower than in normal classes due to technical difficulties and greater likelihood for distractions on the remote side (Freeman, 1998, p. 199). Bollom et al. (1989) has come up with a research that proved an interaction between students and teacher during video conferential lecture is more passive. Students are much more reluctant to discuss the issue with teacher or raise any questions. He also stated that the best use of this form of teaching is in providing a didactic lecture. According to Dallad et al. (1992): "None of the tutors believed videoconferencing had the potential to provide students with an entirely effective learning experience" (Dallat et al.,1992, p. 17). He further enunciates that some teachers tend to become more dominant during lectures via video conferencing, thus students get no opportunity to presumably react in discussions as they otherwise would (Dallat et al., 1992, p. 17).

In my opinion, most experts who try teaching using video conferencing will experience difficulties at first, but with some more practice, the classes could be prepared to suit the conditions of video conferencing more conveniently. Arguments about pace of the class being too slow or about students´ problems with their concentration seem therefore entrenching to me. Freeman (1998) also pointed out that a staff from the side of lecturers is are worried because the use of teaching method via video conferencing puts them to be dependent on other people, mainly IT experts in order to prepare their class

successfully. This also brings us to the fact, that most teachers have no such experience in using video conferencing in teaching. Just as in past many teachers had to work hard to get used to managing in-class technologies that included data projectors, interactive boards, classes which take place in computer classrooms, etc., and some still have problems with it, so do many teachers have problems with adapting this new way of remote teaching. In this case, however, difficulties do not only lie in the importance of dealing with technical problems, but also, and more importantly, teachers have to get used to different methodical approach in this form of teaching. One cannot depend on an active participation of students when there is a question for open discussion. At least not now. It is essential to realize that students themselves are not familiar with this form of teaching. Therefore, if one lecturer can persuade himself/herself to get used to teach remotely via video conferencing, then there is no doubt that engaging, say, 200 students would be equally "easy". To achieve that, the lecturer must first set what the goals of the lesson are, then realize that an internet technology offers its own varieties of collecting information.

When, for example, there is an activity which under normal circumstances requires working in small groups, the lecturer should prepare rules for creating several separated videoconferences, one for each group. By doing so, there is a separation of groups for a the moment which is alright. However, the lecturer needs to monitor the whole class, all the groups as they progress with their discussions separately. To be able to do that, the lecturer would have to be invited to any of the groups by one member from each group for a limited time. As the lecturer makes rounds, there would be a need of observing each group several times, so that the lecturer can point out their mistakes or give them appropriate hints and leadership. Therefore, it would require too many invite requests, logging on into each group of students, then logging off, etc. Such proceedings seems really annoying, not to mention technical difficulties with the connection or a fact that teacher should be given rights of an admin, so that he/she could enter or leave any discussion at any time without depending on anyone. Another possible solution would be to maintain the former whole class discussion. Nevertheless, the groups could not be separately observed and compared to each other by the lecturer. Moreover, there would not be any guarantee that the students would only work in the group that was assigned to them.

Even without proper establishment of this singe part of classroom management the seminar could become chaotic and the criteria of activity would not be met, then the purpose of the class would not be fulfilled. No one can then blame teachers for not being enthusiastic about using video conferencing in teaching. For one reason, it would certainly

required a software that is designed for teaching purpose. For another a whole new set of procedures of teaching via video conferencing would have to be designed, because only a few teachers are able and willing to deal with all the details of classroom management, wherefrom most of the details would have to be designed be themselves.

Eye Contact

One of the key elements of the proper conversation between two people is the eye contact which is so important not just because of the common habit among people or an act of politeness, but because it serves as a part of non-verbal communication that is, in fact, more truthful than the verbal communication (Vybíral, 2000, p. 64). From that point, we can assume, that the possibility of making the eye contact is of outmost importance when we are talking about video-conferencing. Yet there might be some problems about making it possible. One of the described Jim Van Maggelen, a founding partner of Core Telecom Innovations. As he states:

> Have you ever spoken over the phone to someone who was in eyesight (in the same room, across the hall, sitting next to you on a park bench)?
> Do you find it feels unnatural to actually look at each other?
> It's not natural for us to make eye contact when we're on the phone, so even when we can make eye contact, we cannot.
> With a videophone, however, we're expected to make eye contact. That's what it's for, right?
> Unfortunately, the focal point of the screen is not the focal point of the camera, and it is therefore impossible to both look at the person you are talking to, and see them as well. You either look at the screen, or the camera. This makes for a very unnatural conversation, because if you are looking at my face on your screen, your camera will capture you looking down, not at me. If you look at your camera, then I will see you looking at me, but you will not be able to see my face, because your eyes will not be on your screen.
> Either scenario makes for a totally unnatural conversation, which leaves eye-to-eye videophones interesting to play with, but useless to really communicate with (Oreillynet.com).

It is worth mentioning that many users of Skype probably prefer video calls not because it could conveniently substitute the luxury of an eye contact, but because this way, most of them are able to see their relatives, friends, colleagues or their beloved ones although their mutual distance between them makes it impossible for them to see each other at the moment. I am saying "probably", because this was originally only my hypothesis based on my personal judgement. This hypothesis was further examined in the practical part of the thesis.

In terms of teaching via video-conferencing, this might be quite problematic issue. As Scrivener (2005) suggests, the first key element teachers´ getting attention from students is to make an eye contact with as many as possible (Scrivener, 2005, p. 86). Nevertheless, during video-conferencing it might become problematic from several reasons. Firstly, there is the problem with the webcam placed elsewhere than the point of screen where we are looking when we talk to somebody. Secondly, even if this problem was solved, it would not be in teachers´ powers to make an eye contact with everyone, because they would have to switch between all the students´ webcam miniatures, despite the fact that from students´ point of view it might not appear so. However, the eye contact has to be mutual in order to be the actual eye contact. On the other hand, would there be this eye-to-eye contact needed for a good motivation in the first place. The video-conferencing provides a totally different conditions of learning. It is true that it also gives the teacher a needed feedback of students´ reactions, and so on. However, the attention I discussed earlier, could be achieved by the pure fact that a student is focused on the screen of his/her computer while there are no disturbing elements in the room where he/she is. To support that hypothesis, however, there would be needed a practical experience of a situation of teaching via video-conferencing.

Interaction with Class

With a use of Video-conferencing, several methods of grouping come to mind regarding to Scrivener´s type. We can either have a whole class working with a teacher, or there is a possibility of class moving around and mixing together as individuals. Another, potentially very acceptable method, is to work with small groups which Scrivener defines as the group of three to eight people (Scrivener, 2005, p. 84).

In terms of video-conferencing, that might be realized as separately functioning small groups of students, each groups having one video-conference that would be constantly checked by a teacher who would serve as an observer and helper. The whole class would of course be informed about what is going to be the subject of discussion before the start of those separate video conferences. This global information could be provided in form of public instructions on the internet web pages. Once the basic information is give, the students could start their video conferences in which they would be encouraged to cooperate in order to proceed according to the instructions. There would be also a time limit in which the students should be finished. Then the completed work of each group would be sent to the teacher´s email by a chosen representative of each group. This also provides an opportunity for students in each group to realize, who from each group is a creative type, who can type quickly, who can search on the internet for supporting references for his/her group, and so on. It basically introduces a necessity of working together and dividing roles. More importantly, this kind of teaching that allows a possibility, and in this case a necessity, of learning how to work with the internet and its tools, is both motivating for students, because they work with what they mostly like, and beneficial, because it enhances students´ informatics literacy, which is a must nowadays.

Scrivener offers yet another method of teaching - an individual work. Although the term of video-conferencing includes talking to usually more than one people via video call, in case of the individual work, each student would have to work on their own. This would, of course, mean a much greater autonomy from a part of each student, because none of the students would be allowed to communicate with his/her colleagues. However, one reason of students´ reluctance to address a teacher is some of them could feel uneasy to speak their opinions or ask questions in front of others. According to Scrivener (2005), in case there is a student who does not like to speak in front of their colleagues, a teacher should not come closer to such student, but rather go away from him/her in order to encourage him/her to speak out loud (Scrivener, 2005, p. 86). With an occasional use of a video-conferencing, this potential fear of speaking in public could be reduced. On the other hand, the method of the individual work may be good for open communication between teacher and students, however, such student would not be given much opportunity of talking in public (Scrivener, 2005, p. 84).

3. METHODOLOGY

This chapter will cover the means and methods of my research. I will cover explanations of where I carried out the research, what kind of people were my target. Moreover, I will provide information about the criteria that were considered relevant for my research where applicable. In addition, I will discuss the research tools that I used including their distribution among respondents, the process by which the survey proceeded, the collection and analysis of the data.

The Questionnaire

My research was conducted in the form of an electronic custom-made questionnaire that I placed on the internet. It was then open for completion to all those who obtained a link to it. I decided for the electronic form, because I believed that in this way I would be able to cover a larger audience, and thus receive more responses. It also turned in my favour that the results were collected in a digital form already. I was therefore able to process them much faster, and also to record them statistically.

The questionnaire itself was divided into four sections, each of which was visible to the respondents depending on their answers (see the Appendix A). Most of the questions were accompanied with a set of possible answers from which usually only one answer was available to tick. In some cases, there were multiple-choice questions and occasionally, there were questions that required that respondents type in their own suggestions or opinions. These were, however, mostly designed to be optional.

The first page included an introduction with instructions of how to fill out the questionnaire, and then there was an explanation of types of questions and how to deal with them from the technical point of view. In addition, there was information about the approximate time that would be needed to fill out the questionnaire, the acknowledgement and the information about the deadline after which additional responses would not be accepted. On the first page, there was only one question which was to sort out the respondents according to whether or not they used Skype, which I chose as a representative of clients that offer a video conferencing feature.

The second page, which contained questions regarding the Skype itself, was only visible to those who ticked that they use Skype in the first question. If there was a positive answer to the question of whether the respondent uses Skype, the next question then

determined more closely what they use it for. By asking that, I wanted to collect data on what Skype is generally used for and to what extent is it used for study purposes. There were also multiple options including writing of one's own purpose in using it (see Appendix A). The third question then examined why the respondents chose Skype, rather than other communicational clients. I left there only one available option including a blank field into which each respondent could write their main reason for using it. The question was to clarify the reason for using Skype either for its free-of-charge status or because there were other reasons. Next, the fourth question examined the level of experience with the client that each respondent had. From that information, it was possible to monitor respondents' attitude towards Skype and their ability to make objective judgements about its possible use as a tool of education. With the fifth question I wanted to determine how many of respondents use which platform in order to be able to evaluate their current f level of ability to participate in a potential video conference via Skype. The sixth question examined the rate of occurrence of most common problems with voice calls. Particular problems that have been examined were noise, shuttering of sound, silent voice, echo, lost connection, mishearing of certain words and too many people speaking at the same time. By asking for those problems and their level of occurrence, I was able to gather some concrete evidence which I was later able to take into account when discussing problems of using video conferencing. In addition, I decided to use the scale method of data collection, because in this way the seriousness of each problem is more apparent. Later, in the seventh question, I used the same method of survey, but this time with video calls. Features examined there were as follows: dark picture, picture lag, lost connection and low video quality. Once again, results from this question served as valuable arguments when discussing problems of using video conferencing.

On the same page then, there were some more general questions about Skype. The first of these (the eighth question overall) was designed to examine what other features about Skype might discourage its users. The subjects of survey were: design, layout of control switches, contact list layout, small number of preferences, possibility of data leak, overall architecture and others depending on the ideas of respondents. This question was made multi-optional. The ninth question, which compared Skype to classic E-mail, was designed as an alternative type. It served to clarify certain more psychological aspects about communication concerning voice and video contact and their impact on respondents' preference as well as their preference for written communication compared to voice and video communication. The tenth question dealt with how many of respondents use the

mother tongue and the foreign language. This was to clarify the view of using foreign language during teaching via video conferencing. The eleventh question examined, with an extension of the question nine, the preference of chat versus voice call versus video call. The twelfth question was designed only for one purpose - to separate those who do not use video conferences from those who do. It was then designed as simple yes/no question. The last three questions were intended to collect concrete opinions from each respondent who was willing to fill them out. They were then taken into account when I was writing the section on implications and the final evaluation. The thirteenth question asked respondents about their opinion whether there are any educational advantages in Skyping. The fourteenth question, then, asked about any possible problems in using Skype for teaching purposes. In both of these questions, the respondents were encouraged to use only keywords in their answers, although they could also type their opinions in full sentences. The fifteenth and last question from the second page asked respondents for any other comments on Skype.

The third page was dedicated to thse respondents who had previously claimed that they use video conferencing. The page then contained three additional questions. The first of these (the sixteenth in total) asked about the main reason why the respondents use video conferencing. There were several options, of which only one was accepted as the main reason (see Appendix A). There was also a field into which any of the respondents who answered the question could write their own reason. With this question, I received feedback about what is the main reason for preferring video-conferences in users' opinion. In the seventeenth question I asked frankly whether, in the respondents' own opinion, video-conferences could replace the current attendance educational system. Because this was a delicate question that required support of some arguments, I encouraged the respondents to include those in the following (eighteenth) question. This question was made an optional and as a free field where the given respondents could explain themselves.

The fourth and last page was the place to which all the respondents were navigated eventually (see Appendix A, Page 4). Here, we can find three remaining questions. Those were merely intended to sort out all the respondents according to three main criteria - gender, age and occupation. According to my previous counting, the nineteenth question simply asked respondents about their gender, thus sorting them out into two groups. By doing so, I was able to monitor the differences in the answers of respondents, their experience and enthusiasm for the topic of using Skype and video-conferencing in education depending on those attributes. While it was not intended to have equally

numbered groups of respondents according to their gender, I still assumed it would be good to have some record of that distribution. The twentieth question then sorted all the respondents into several groups that I predesigned. It was not important to know the exact age of each respondent. Therefore, I managed to divide them into the groups, so that they could be statistically recorded. Then the results could be analysed with a respect to types of opinions - positive or negative about implementing Skype in schools. The very last question, which further extended the knowledge about types of respondents, dealt with the occupation of each of the respondents. There were some preset options, many of which were highly relevant for my research. Any other types of occupation were then symbolized by the option "other" (see Appendix A).

Target Subjects

My target subjects were those who have at least some experience with Skype its functions, so that they could provide satisfactory feedback in a subjective evaluation of the possible implementation of the client into an educational process. Moreover, I focused especially on those who were even more experienced in using Skype and encouraged them to share relevant information about video-conferencing and their further opinion about using it for educational purposes, which was the ultimate goal of the thesis. What is more, I also processed all the answers of those who do not use Skype in order to enhance the statistics and to be able to provide a global view of the respondents to the topic.

Criteria Relevant to the Research

The research was designed to meet the following criteria: Complexity - because the questionnaire was distributed among all people without any limitations, it had to be designed with regard to as many cases of occurrence among respondents as possible. Absoluteness - it was necessary to provide freedom in the number of responses, since the data were mostly collected for statistical purposes; also it was distributed on the Internet, and so there was no telling how many respondents would participate; also I did not want to cut off any potential answers that would not be submitted because a limit had been reached; the negative output of such method is in the large ultimate number of responses. Temporariness - there was only a 14-days period for the accepting of responses; after that period, I manually turned off acceptance of any additional responses. Simplicity - in order

to collect as many responses as possible, it was imperative that the questionnaire be made simple, short and with clear instructions.

Research Tools Used

To create the questionnaire, I used free software from Google Documents, where I first created a skeleton of a form which I divided into the four sections and then completed with questions I had prepared in advance. I also used Google Documents to process the results into diagrams which I then could use in my work. Consequently, I used free Google URL Shortener in order to shorten the link to the finished questionnaire.

Distribution of the Questionnaire

The link to the questionnaire was then distributed among my friends, relatives and others with a message to distribute it further. By this method I believe the link reached the 3rd to 4th level of sharing at times, although I do not have evidence to support that hypothesis. The primary respondents, however, were chosen from my circle of friends, and most of them are involved in the teaching and learning process. The forms of distribution of the questionnaire were mostly electronic - through social networks such as Facebook and Google+, via email, and so on.

Processing of Collected Data

For processing the data that were submitted via the questionnaire I used once again Google Documents, by means of which I sorted questions into the table, from where I was able to read and use any kind of information that was collected. In addition, I was able to process quickly every answer selected from the prescribed options. Those which were optional and custom-made were processed individually.

After sorting out all the data, I made diagrams out of those answers which were supported by system of votes - those were the prescribed answers. Other answers that were collected from each respondents as individual responds were included as part of results at the end of each question that I covered in the following part of my thesis. It is worth noting that I did not registered any problems from the side of respondents concerning mistakes in the questionnaire or the process of filling it out itself.

4. RESULTS

This part of the thesis illustrates results on the questionnaire that was distributed among respondents. The presented statistical data will be supplemented by diagrams for better convenience. After providing basic information by the diagrams, I will give a commentary on each question/diagram in the Commentary part. Some comments will be additionally enhanced in the part of Implications.

Statistic Diagrams

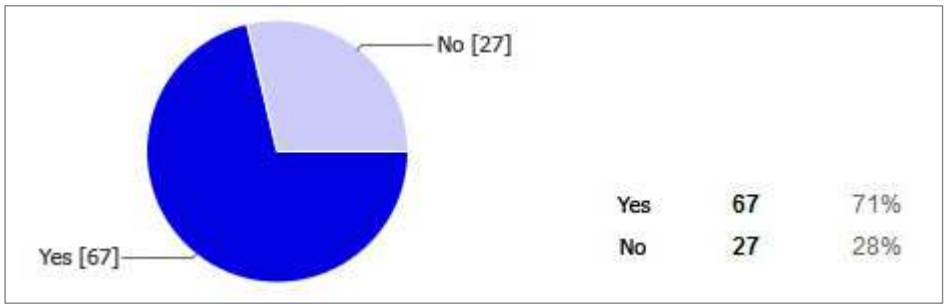

Figure 1. Usage of Skype among respondents. This figure illustrates a distribution of how many respondents use Skype - those answered positively.

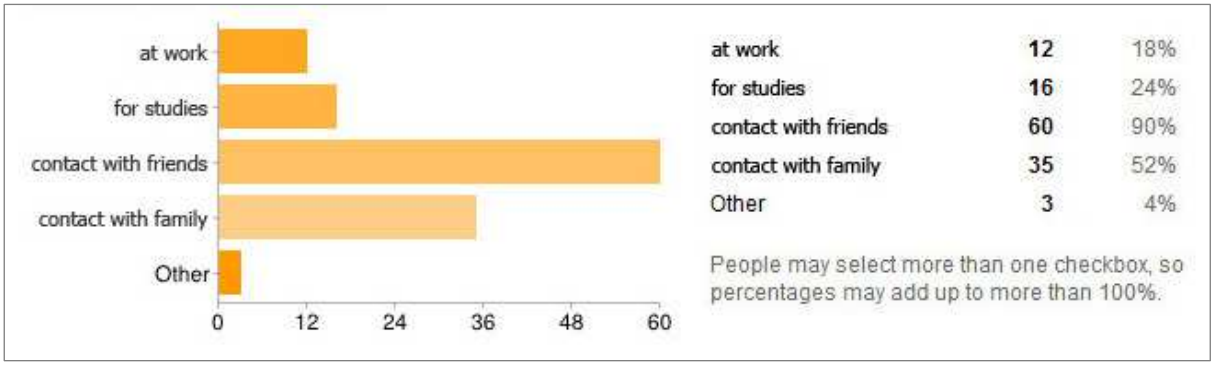

Figure 2. Main reasons for using Skype. This figure illustrates a distribution of the main reasons for using Skype according to the respondents.

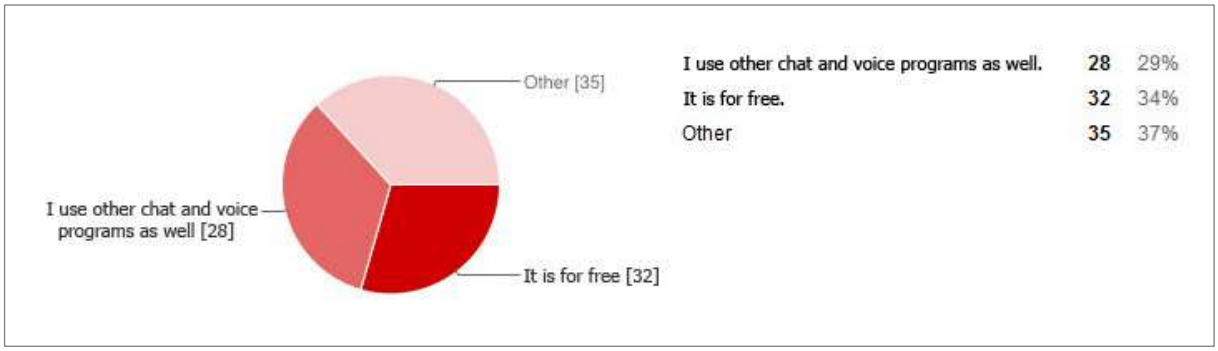

Figure 3. Comparison of Skype with other IMs. This figure illustrates a distribution of how much people do or do not prefer Skype.

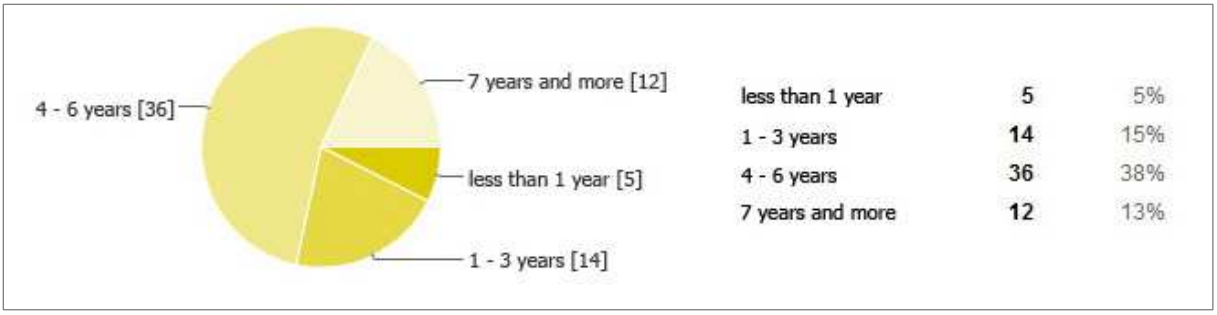

Figure 4. Experience of respondents with Skype. This figure illustrates for how long each respondent has worked with Skype.

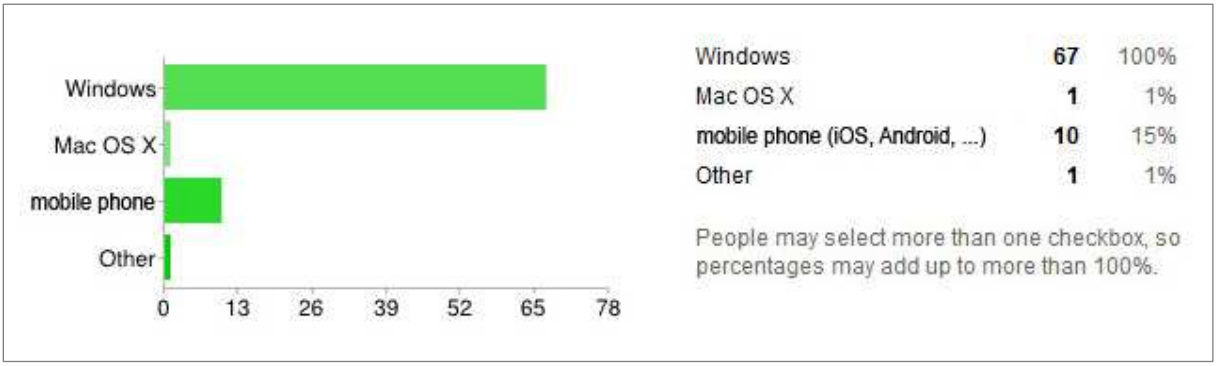

Figure 5. Distribution of platform preferred for Skyping. This figure illustrates the platform preference of users for Skyping.

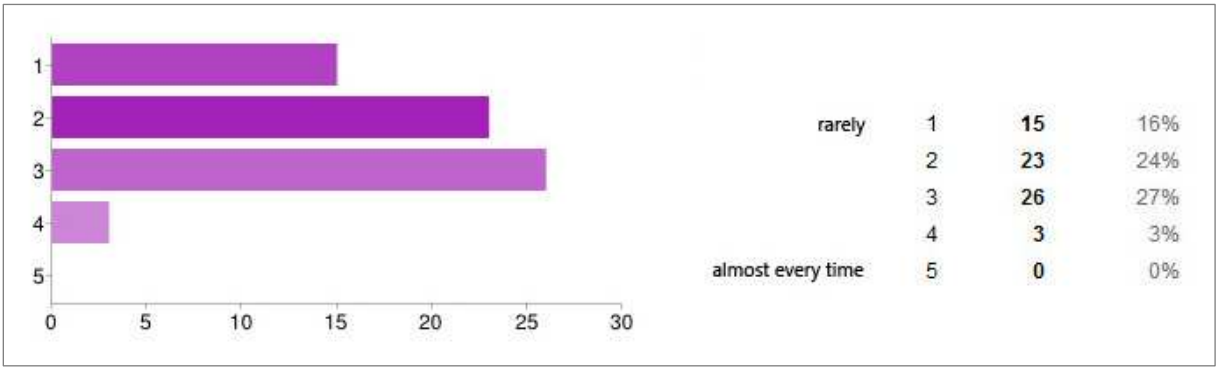

Figure 6. Audio problems - Noise. This figure illustrates the frequency of parasitic noise occurrence in audio calls.

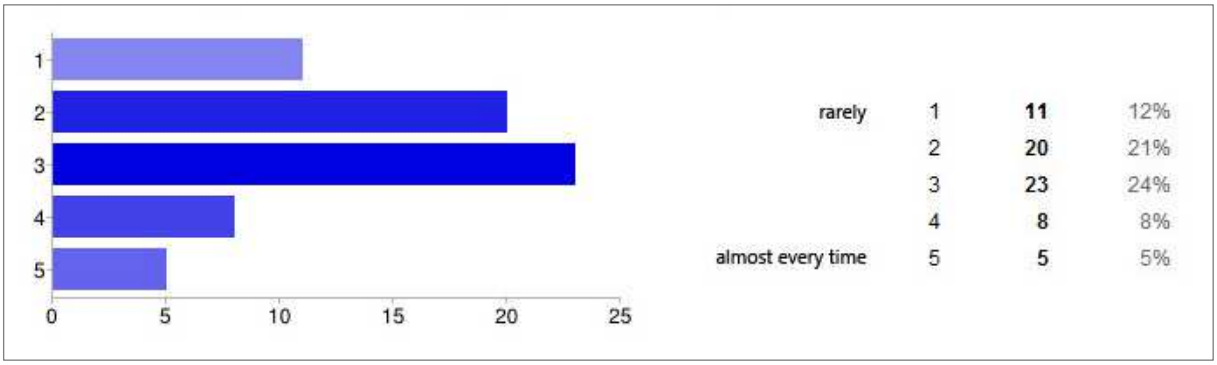

Figure 7. Audio problems - Sound shuttering. This figure illustrates a frequency of occurrence of sound shuttering in audio calls.

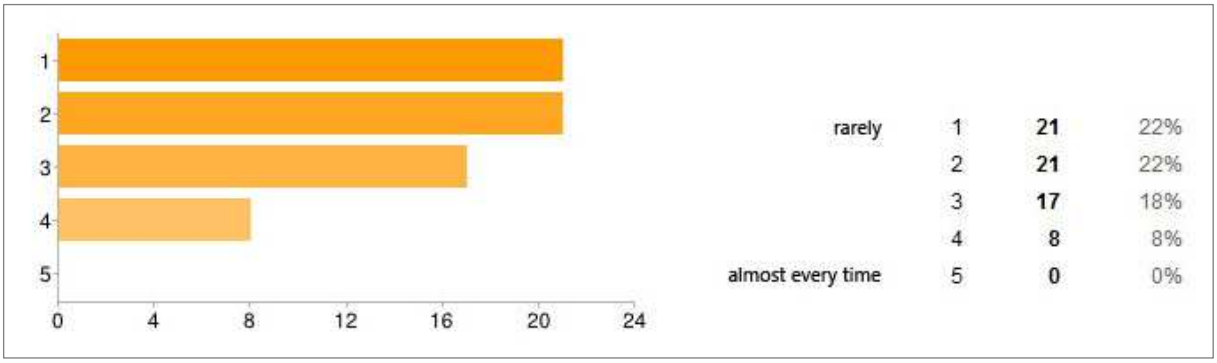

Figure 8. Audio problems - Echo. This figure illustrates the frequency of occurrence of echo in audio calls among respondents.

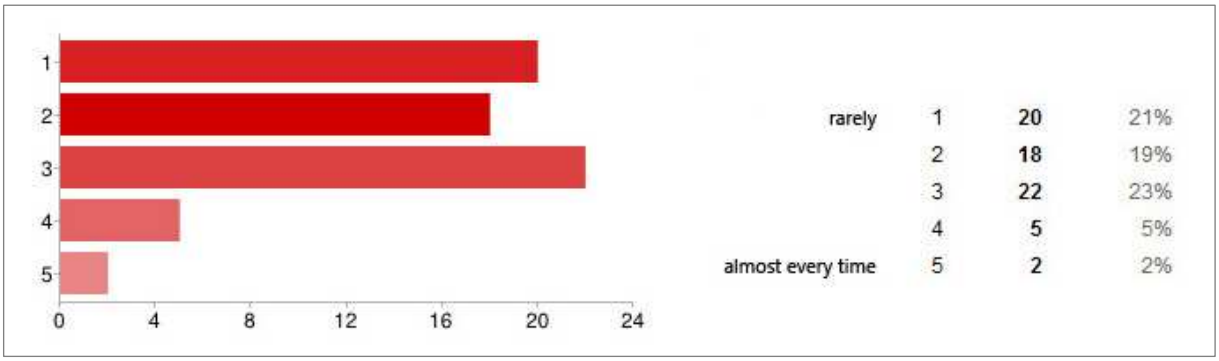

Figure 9. Audio problems - Lost connection. This figure illustrates the frequency of occurrence of lost connection in audio calls among respondents.

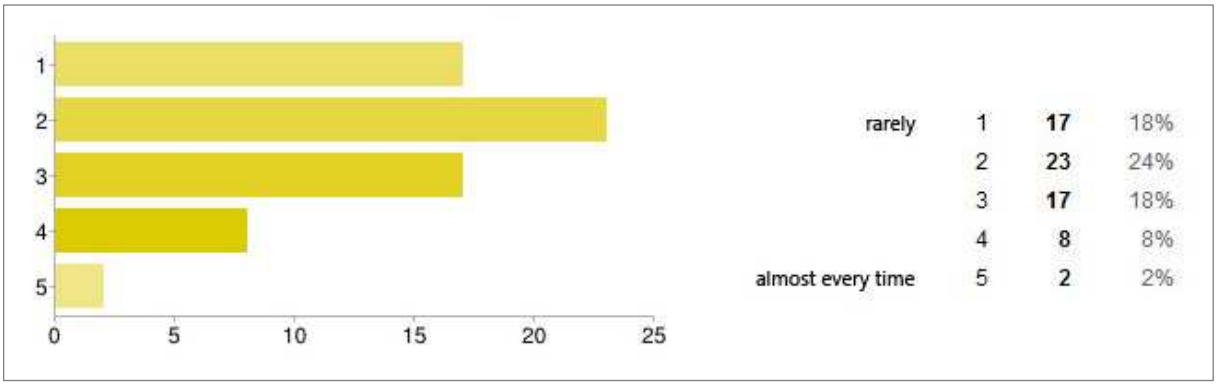

Figure 10. Audio problems - Mishearing. This figure illustrates the frequency of occurrence of cases where respondents misheard some words.

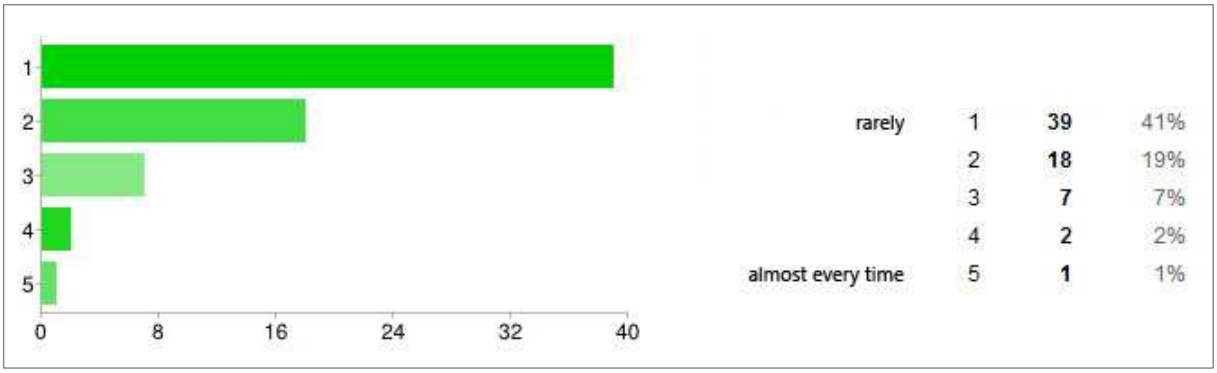

Figure 11. Audio problems - Too many people talking at the same time. This figure illustrates a frequency of situations where people interrupt each other during voice calls on Skype.

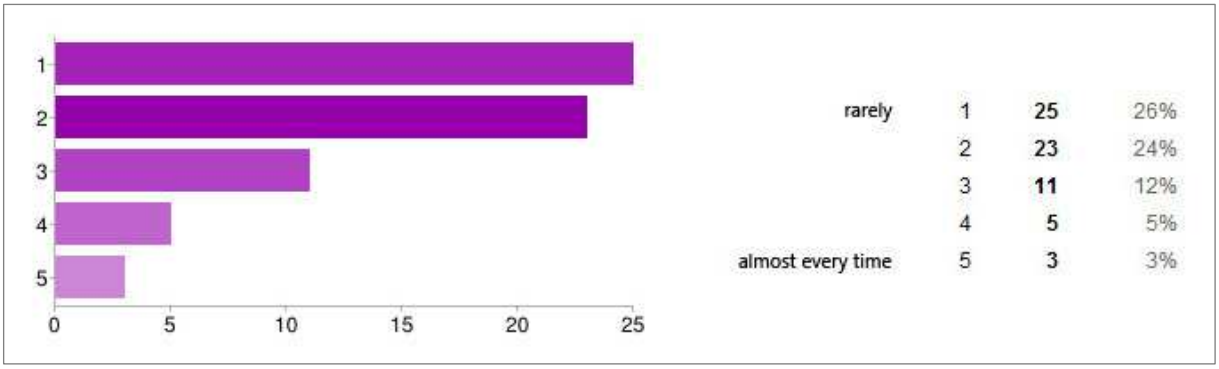

Figure 12. Video problems - Dark picture. This figure illustrates a frequency of occurrence of dark picture in video calls among respondents.

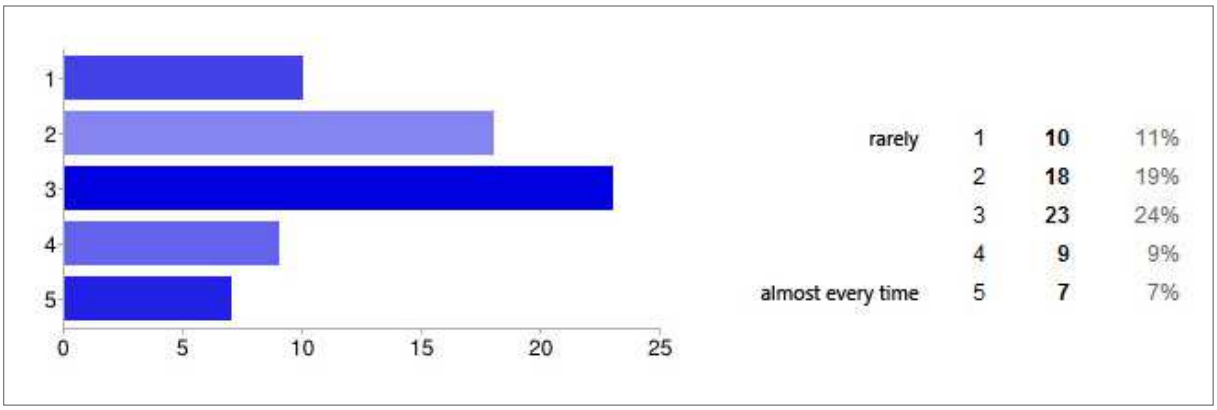

Figure 13. Video problems - Video lag. This figure illustrates the frequency of occurrence of video lag in video calls among respondents.

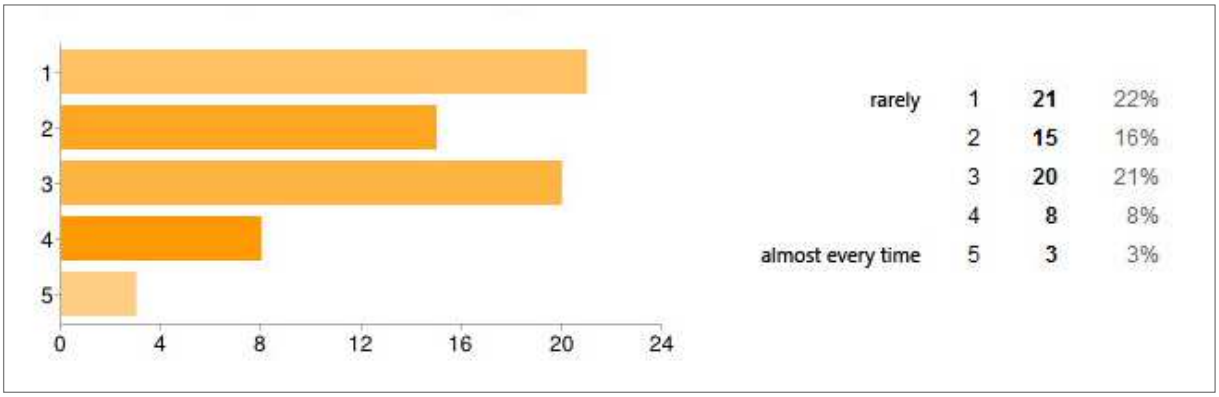

Figure 14. Video problems - Lost connection. This figure illustrates the frequency of lost connections in video calls among respondents.

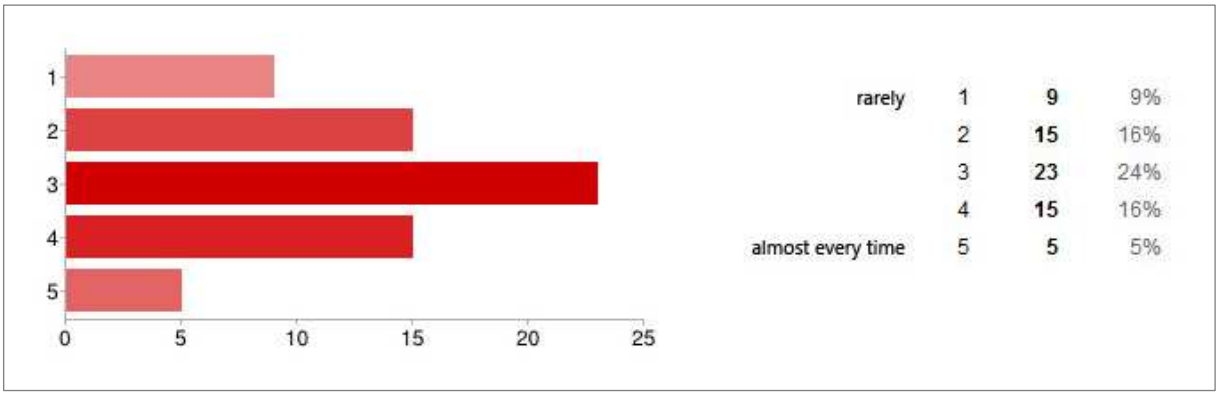

Figure 15. Video problems - Low quality. This figure illustrates the frequency of occurrence of low quality video calls.

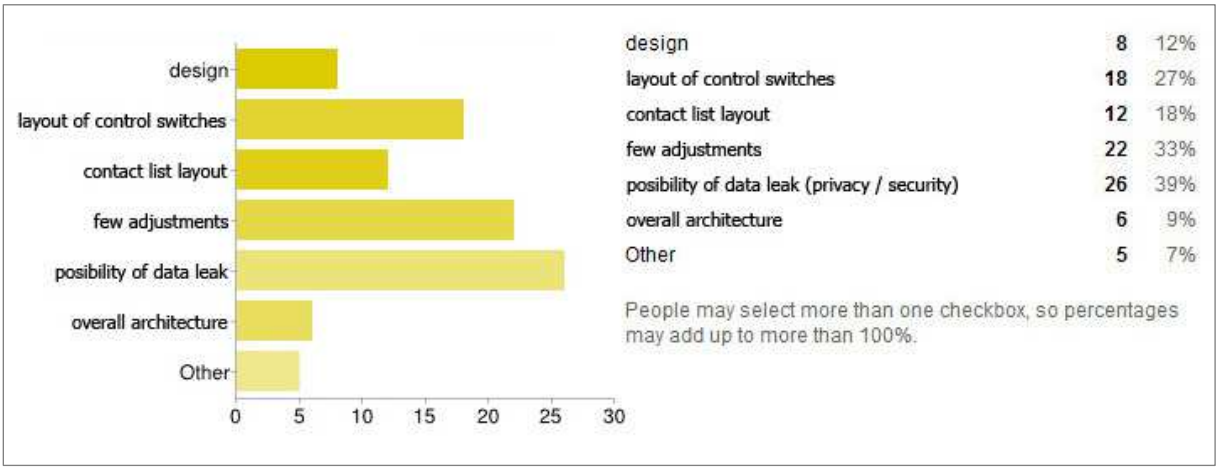

Figure 16. Disadvantages of Skype. This figure illustrates the distribution of disadvantages of Skype and negative opinions according to respondents.

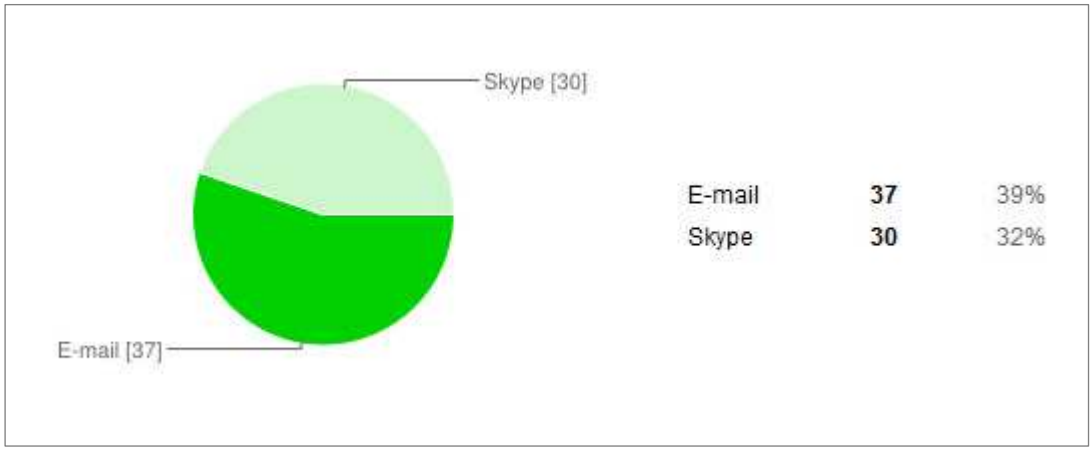

Figure 17. Preference of Skype compared to E-mail. This figure illustrates the distribution of the preference of Skype versus E-mail among respondents.

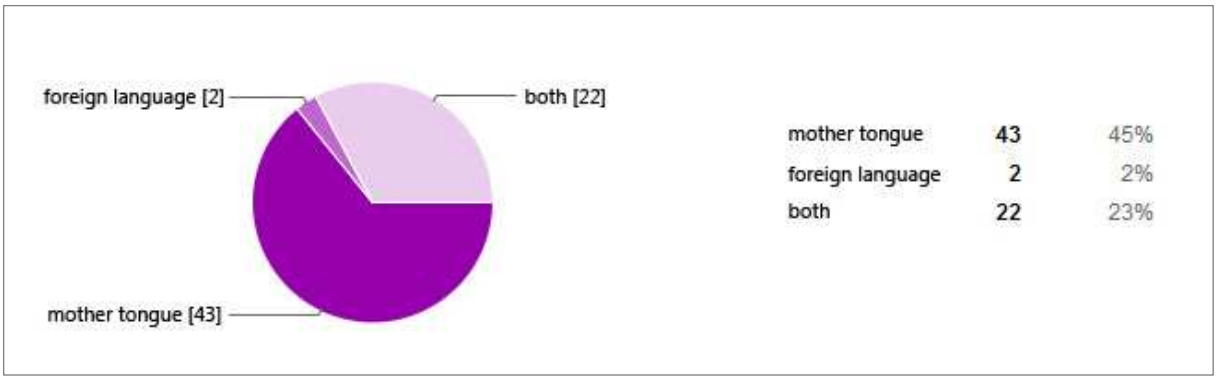

Figure 18. Preference of language during Skyping. This figure illustrates the distribution of language that respondents use when they talk to someone via Skype.

Figure 19. Distribution of types of communication in Skype. This figure illustrates the distribution of what respondents use most from chat, voice calls and video calls / video conferences.

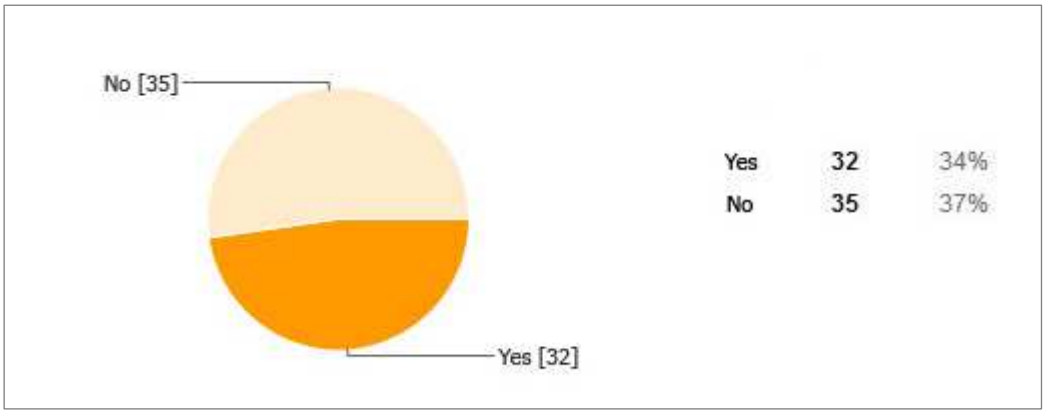

Figure 20. Distribution of types of communication in Skype. This figure illustrates the distribution of what respondents use most from chat, voice calls and video calls / video conferences.

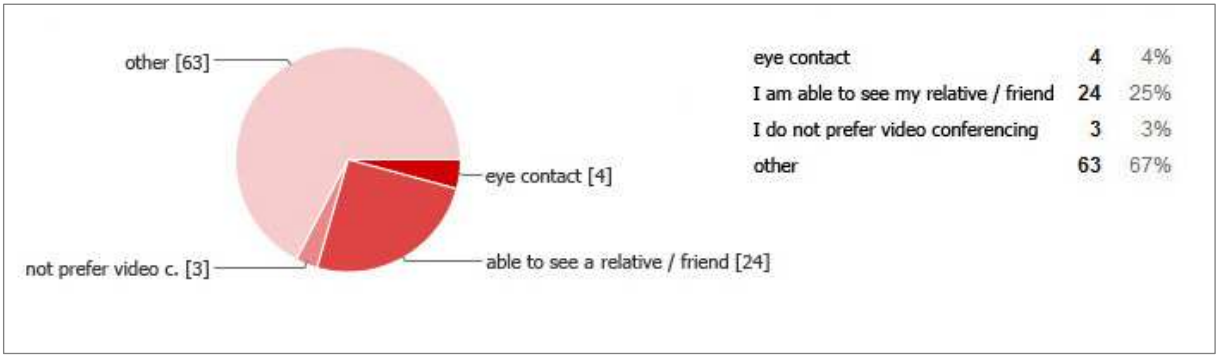

Figure 21. Distribution of respondents using video-conferences. This figure illustrates the distribution of how many, out of all the respondents, use video-conferences, and their reasons.

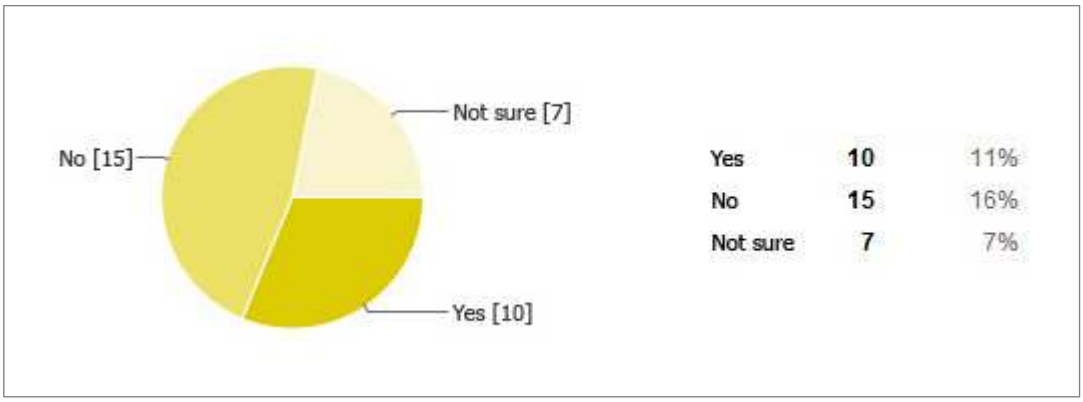

Figure 22. A possibility of replacement of current attendance educational system by video conferencing. This figure illustrates the opinions of respondents about whether the current attendance educational system could be replaced by video conferencing.

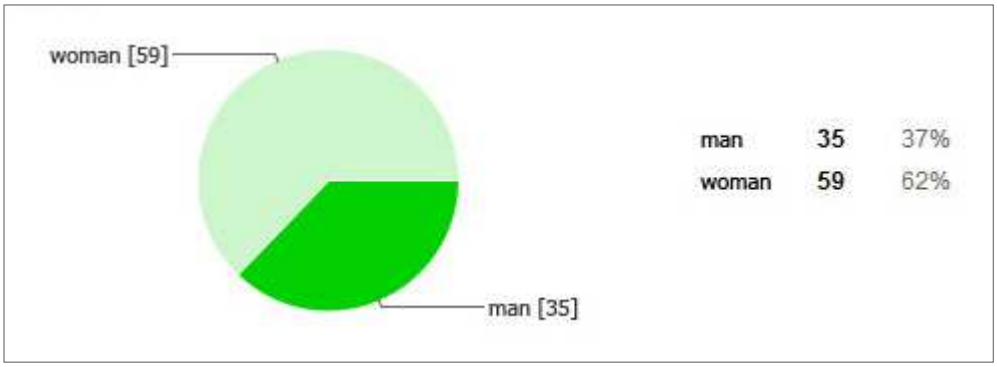

Figure 23. Distribution of gender among respondents. This figure illustrates the distribution of gender among all those who participated in the questionnaire.

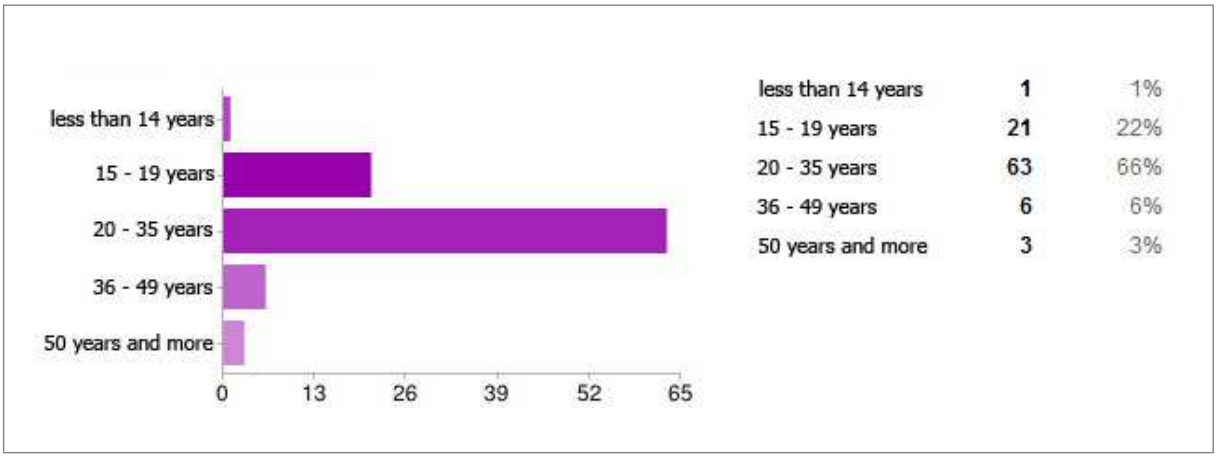

Figure 24. Distribution of age among respondents. This figure illustrates the distribution of age among all those who participated in the questionnaire.

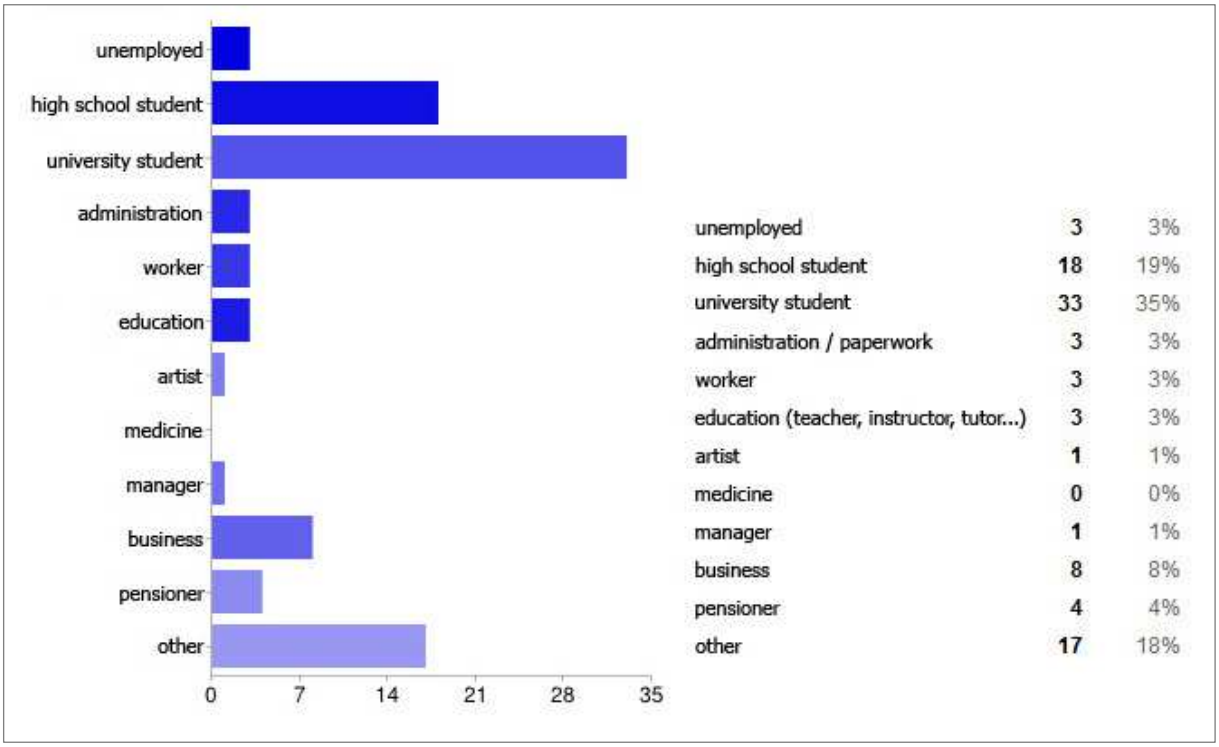

Figure 25. Distribution of respondents according to their occupation. This figure illustrates the distribution of respondents according to their current occupation.

Commentaries on the Results and their Implications

Commentary

To begin an explanation of the questionnaire that has been spread among various kinds of people, I decided to give a chronological presentation of all the questions, each of which were statistically recorded. As I will be presenting the questions, I will also offer explanations about their significance, on several occasions including their chronological listing within the questionnaire. The presented statistical data will also be supplemented by graphs for better convenience.

The very first question - the "yes/no" question in which I asked people whether they do use Skype, I wanted to sort all the respondents into two major groups - those who use Skype and those who do not. This implies that I also took a negative answer as a part of my research because I wanted to know what percentage of respondents are actually involved in Skyping. Those who responded positively were navigated to a following page with other more concrete questions about Skype. Those who responded negatively were navigated to the last page of the questionnaire, which included some personal questions such as age group, gender, occupation, and so on, in order to sort these people according to some attributes. By separating users into these groups I was able to monitor how many respondents are familiar with the software. I dare to say "familiar" despite the fact that the original question was about using Skype, not knowing it. It is because we can assume that people who responded negatively are on one hand those who do not know Skype at all, and on the other hand some of them could also be those who know about Skype but do not use it. This assumption leads us to a conclusion that those people who know about Skype, yet are not using it, could be sorted into the group of people who do not have much confidence and trust in Skyping, therefore, they would respond negatively to the question whether to use Skype for teaching, since the process of teaching is a much more challenging matter when it comes to depend on video-conferencing than simple friend-to-friend talk. And Skype, as presented below, still serves mainly for those informal discussions which do not require as much concentration on the subject of talking as during the learning process.

According to the graph, we can see that most of the respondents actively use Skype (see fig. 1). Altogether 67, out of total 94 people asked, chose the positive answer which makes it the majority of respondents - 71%. Nevertheless, in order to determine what percentage of these active users of Skype actually use video-conferencing, I had to conduct a similar process of division a few more times.

Those who answered positively were directed to the set of questions concerning Skype in more detail that followed. In the first of those questions I asked respondents what they use Skype for. They had several options to choose and one more custom option where they could include any other reason. The question was also made as a multiple-choice type, because one can use Skype for several reasons listed there. As we can see in Figure 2, most of the respondents prefer using Skype in order to speak with their friends or relatives. Those choices were ticked 60 and 35 times, keeping in mind that all 35 votes for "contact with family" could be voted by 35 people of the 60 who voted for "contact with friends" option. Nevertheless, those two groups could be classified as emotionally-based reasons. This way, they both created a hypothetical superior group together. On the other hand, we can create another superior group from the choices "at work" and "for studies", which together form something like practically-based reasons. An aspiration for studying by means of using Skype is certainly a practical reason. Of course, from the educational point of view, we should stick to the only option that carries the full meaning of this, and this was ticked 16 times. It is not enough to support the hypothesis that Skype is widely used for self-educational purposes. However, it is a reasonable number to assume that there is a possibility of learning via Skyping. As for the "other" choice, no one entered any other relevant reason why they use Skype, except for one case where a respondent summarized all the available choices by typing in "all that has been mentioned". The other two custom reasons were not relevant to the topic, and so I omitted them.

The next question dealt with a comparison of Skype with other IM applications. As was mentioned in the theoretical part, each program is designed differently according to what speciality it offers. Whereas several IMs offer all the "currently essential" gadgets (chat, voice calls, video-conferencing, and so on), at least one feature is always developed with more intensity than others. With that in mind, we can say that Skype specializes in voice and video calls more than most of its competition because of its breakthrough history.

In Figure 3, I asked about the comparison of Skype to other IMs and voice applications. In this question, there was only one option available. The question was formed to elicit the reason why Skype suits them most. As we can see from the graph, the numbers of votes are quite comparable. The main reason why I personally prefer Skype, should there be a software for remote ELT, is that it is free, and that is probably one of the main reasons for the respondents as well, because there almost 1/3 of votes went to this option. To prove that not even Skype is perfect in all aspects, for example some IMs can

offer much more likable emoticons, which are used in chat conversation, with a possibility of downloading literally thousands more, and other things, we may note that many respondents (28) use other IMs as well.

The most interesting choice with the most votes (35) was "other". I will now present some of the additional options that I collected: "I use ICQ", "Skype seems to me like a best choice", "I like the architecture and style", "I am used to Skype since it was the first app for voice calls", "Because of possibility of voice and video communication", "I have used it for a long time and I learned how to operate Skype".

Another question was about how much experience respondents have with Skype. I intentionally divided time durations according to the main breakpoints in the history of the development of Skype. The "7 years and more" choice was to point out those who became familiar with Skype at times when there was not yet an option of making any video-conference, nor was there any option of sending SMS via Skype. The second choice "4 - 6 years" of experience was to determine those who probably started using the application because of the possibility of making video calls. "1 - 3 years" of experience with Skype was designed to pinpoint a group of smart phone users who used Skype in their mobile phones as well as some others who started using Skype because of the influence of a mainstream. The last choice was then designed merely to point out those who are not so experienced in the field of Internet communication and Skyping.

As we can see in figure 4, many of the respondents started using Skype 4 to 6 years ago, which is relatively a long time. There are not enough respondents to draw any satisfactory conclusion. Also most of my respondents were not older than 35 years (see fig.999). Nevertheless, we may say that, with regard to the history of Skype, one of main breakpoints came between the years 2005 and 2007.

The following question, which determined on which platform the respondents run Skype, was designed in order to gain some idea about what operating system, which goes with a type of manufacturer, is the most used nowadays. While it goes without saying that the Windows operating system by Microsoft is likely to be our best bet, the question still remains, by how much. The question was left as a multiple-choice, so that people can tick several options if they use Skype on more than one device.

According to the figure 5, sixty-seven people out of those who said they were using Skype (67) chose Windows as the platform on which they are running it, which makes it 100% of users of Skype (that is of course a current situation in the Czech Republic, thus in other countries, the distribution of platform preference may differ). That leads us to an

almost certain conclusion that regardless of the other platforms, the main criterion in establishing a class using video-conferencing should be made with regard to Windows users primarily. Mobile phones were the second most voted choice, which suggests that there is a tendency towards using compact devices instead of PCs. Those devices, however, lack many of the important features that are required for holding a class successfully. For example, the picture is too small to grasp any meaningful information from the lecture, should this be provided visually.

The following set of questions is dedicated determining what problems can occur during audio calls. Needless to say, the higher the frequency of occurrence of those problems the more difficult potential lecturing via Skype becomes. I decided to concentrate on the most problematic issues which come to mind when talking about audio calls. Then I designed a scale question for each of the issues, so that respondents could tick to indicate how often they encountered each issue. Number 1 represented a rare occurrence while number 5 signalized that the issue is generally problematic among most users and should be dealt with before proceeding to further integration of digital technology into ELT.

The first problem about audio calls that was examined in a question related to dealing with parasitic noise during conversations and how often respondents encountered it. According to figure 6, there is occasionally at least some parasitic noise during conversations. Nevertheless, this does not make the conversation significantly less fluent or intelligible. In some cases, there was no experience of such a problem. Assuming that there are such users who do not use any special headset peripheral and still are clearly understood at the other end, we can say that noise is not a very problematic issue here.

Another problem that I chose to examine was shuttering or lagging of sound. In practice, this is recognised as receiving just a fragmented succession of words instead of clean fully intelligible versions. As can be observed from the graph in figure 7, this still remains a problem, although its seriousness is not considered to threaten the communication much. Otherwise, there would be many more positive responses to this issue. The differences between these occurrences are mostly caused by the size of broadband. When it is filled, it cannot transmit any more data, and so the conversation literally goes faster than could be transmitted. This may not be any problem in most cases, when there is a conversation between two or three people. It can, however, become a serious issue when there are, for example, 200 students about to log into the same conversation.

The third problem that I examined was related to echo and its level of occurrence in voice calls. The problem usually occurs when there is a possibility of capturing sounds between microphone and speakers of the same device. Then a tunnel is created and the signal is many times transmitted in a loop before it is actually sent to another device. Skype developed the loop canceller, which can identify it and minimize it. Because of this, I decided to monitor even that problem, because each small problem could have a major impact on the final form when added to other problems.

According to the graph in figure 8, most of respondents did not encounter echo in their voice calls. However, they also were not reluctant to vote for a larger frequency of occurrence. Therefore, we cannot say that the problem has been exhaustively dealt with.

The next problem, which may occur for several different reasons, is a lost connection. As is apparent from the graph in figure 9, again, the majority of respondents consider this problem to be not so frequent, and so, despite so many events that might cause this problem, including power failure, lost internet connection, a cable accidentally unplugged, and so on, it still remains to be not such a problematic issue. Nonetheless, most of the respondents experienced such situation once in a while. Often it cannot be predicted and completely dealt with.

The next question dealt with the possibility of mistaking some words for others because of their similarities in pronunciation. So this is not much about homophones that we can distinguish from context rather than from manner of pronunciation. It relates to words with which some non-native learners have problems even without being transmitted via voice call. This could then well be compared to any other situation when people speak to each other without having eye contact.

As is apparent from the graph in figure 10, in most cases this issue was not relevant enough to make any radical negative judgements. In addition, we have to calculate with the fact that some respondents do not use headsets at all during their voice calls, which significantly reduces the quality of the audio. On the other hand, almost every respondent was communicating in their mother tongue, thus the chance of mishearing words because of a lack of theoretical knowledge of language or poor pronunciation is very slim. Therefore, we can say that the problem cannot be omitted either. Still, there remains the fact that we are talking about simple voice calls, not video-conferences where there is a potential eye contact, which greatly supports the ability to comprehend.

The last of the questions related to problems with audio was not so necessary, yet it still demonstrated the quality of Skype as a proper client for voice calling. When it comes to a communication without visual connection, there is often, actually, a great problem in maintaining the right pace of conversation in which only one person is talking while the other is listening, and then they take turns in talking and listening without interrupting each other. For instance, during any common phone call there is such a risk. One can hardly imagine a situation in which there are five or more people participating in the discussion without any interruptions. Fortunately, the developers of Skype knew this is likely to happen. Therefore they programmed Skype to scan for the strongest voice received and this was then preferred to the others. Also, any other sound from a different person that was of different frequency could then interrupt the strong voice. With this method, there is only one person talking every time. We can see clearly in figure 11 that this problem tends be the least frequently experienced.

Next set of questions is dedicated to a determination of what problems can occur during one-to-one video calls. As previously, a system of scaling seemed the best way to determine their frequency. Number 1 represents a rare occurrence, while number 5 means a very high frequency of experience of the given problem. Furthermore, because a video call cannot simply be made from any voice call while in progress, at least not in Skype, I had to include some questions that are similar to some from the section of audio problems. In this way I was able to compare differences between audio and video calls from a technical point of view, should there be any.

The first question was related to a level of occurrence of having dark picture which might result in not being able to distinguish what is happening in the video that is being transmitted to us. Of course, this issue depends strictly on a quality of a webcam of a person who sends his/her video to us. Moreover, it can be improved by the camera's preferences. From my experience, I presume that not many users buy an additional webcam, which usually is of better quality, since most of them already have one attached to their laptops. Provided, that people usually keep the room enlightened for the others to be able to see them during important calls, we can observe in figure 12 that not many of the respondents experienced such problems with a picture.

Another question dealt with a possibility of video lag during a video conversation. The issue may be more problematic, since a transmission of video is much more demanding on hardware dispositions than the transmission of just voice. During this process, a computer must be able to transmit not only video, which takes much more

memory itself, but the audio signal that still has to be part of a conversation, thus not one, but two things.

This hypothesis was examined in the question. As we can see in figure 13, the lagging of video is more frequent than lagging of audio in previous case. Most of the respondents concentrated their votes in the centre - number 3 option. Despite the fact that in the case of video lag, the audio usually works independently of the video, thus people still can hear each other while the screen is frozen, there might be cases where even temporary loss of the video contact may cause serious problems, from simple misunderstandings to a failed experiment or test.

In the next question, I decided to examine once more the rate of experience of a lost connection. This time, it concerned video calls, which are unquestionably harder to maintain from the technical point of view. According to the graph in figure 14, cases of lost connection while using video calls happen more often than during voice calls. Note that the number of responses is similar in both questions (67). We also might take into account the fact that not many users own the latest high-tech laptops, and so some of that lost connections might be caused by a low performance of devices on which Skype was running.

Finally, I placed a question that examined any other graphic deficiencies which would cause low quality video calls. I summarized it all and labelled it as "low quality problems". From this question, we can see how much even the smallest deficiencies influence the overall image when taken altogether. It is worth noting that any deficiencies that have origin in low resolution webcams are gradually fixing themselves as the webcam developers constantly work on improving the resolution of webcams as well as their ability to function in the dark.

According to the graph in figure 15, the problems with video quality seem to be still topical, despite the fact that many webcams should be sufficiently comfortable to hold a video call with clear image. Most of the respondents voted for moderate quality in most cases. Numbers next to the central number 3 then received equal number of votes. In many cases, a video has only a supplying function, thus it does not need to be crystal clear. Nonetheless, a text on the board, for example, would be quite hard to read via video call.

After conveying the questions concerning audio and video problems, I enhanced the questionnaire with several questions that examined more specifically respondents' opinions and suggestions about Skype. The first question was to clarify what disadvantages Skype has according to its users. I offered a set of the most possible topics which might be

relevant to my respondents (see figure 16). Furthermore, I placed one more option in which any respondent could insert other suggestions or comments. Needless to say, each respondent was allowed to tick more than one option.

As we can see in figure 16, design is classified as satisfactory by most users: only 8 out of 67 found the design disturbing. As for the layout of control switches, there were rather more negative responses: 18 out of 67 consider it to be a disadvantage. We could say that each program demands some time and effort from the side of user before its controls are mastered. Next, let us observe the "contact list layout", which is evaluated rather positively, with only 12 negative votes. Another aspect that was examined was the rather limited number of adjustments ("few adjustments"). Almost one third of Skype users would like to have more freedom in customizing their Skype for their convenience. I will enhance the evaluation of this matter in next part of my thesis.

To move on, the most voted option of all the possible disadvantages presented in the list was the "possibility of data leak". This certainly remains to be an issue to discuss among many users. Despite the fact that Skype's data encryption is not likely to be deciphered, almost half of respondents (26) think otherwise. It is not a miracle that many have doubts about a program which is free of charge. This is a reasonable argument which many large institutions take seriously, and they would prefer to pay something extra for some other software through which they can do their businesses. But educational facilities usually do not have sufficient funds to support the financing of multi-license and expensive programs with guaranteed security. Moreover, even if there was a data leak, which is highly improbable, I personally can hardly imagine a situation in which leaked information from a lecture could cause any serious troubles.

In the next question about the overall architecture I referred to the manner in which Skype deals with multiple active windows with a conversation, the current organization of the contact list, the manner in which new contacts are searched and added, the profiles, and so on. As expected, only a few respondents had problems with this: not even one tenth of the total of 67 (see figure 16).

As above, I will present, this time, all the responds to the last choice of "others", or other comments about the disadvantages of Skype, if you like, in form of a list: "Great consumption of operating memory", "It suits me fine", "Nothing comes to mind", "Low quality transport" (NB: probably the transport of files a.k.a. file sending), "Relatively high requirements on HW". Since none of the objections was repeated more than twice, I do not attach very much importance to them.

In the following question I asked my respondents what they prefer more, Skype or E-mail. The reason why I chose Skype instead of IMs or voice and video communicational programs in general was simple: Skype can clearly present itself as one of the main leaders in all these features. Moreover, it has been around for quite some time and has gained in many terms a formality comparable to E-mail. I asked all those who answered positively about the question whether they work with Skype (67 people in total). As we can see from the diagram in figure 17, there are slightly more of those who prefer E-mail (37 votes). It still seems to be the number one for most people, not only because of the formal character, but also because E-mail does not put people in direct confrontation with each other, whereas Skype ushers in a much closer relationship than E-mail. Furthermore, if we need to make an interlocutory contact with some institution there would be no reason for us to add a Skype contact for this institution for another time. Thus, Skype contacts are usually taken by the majority to mean long-term contacts.

The next question was constructed in order to determine what language respondents use when talking to someone via Skype: their mother tongue or a foreign language or both. It turned out that many of respondents use both languages. According to figure 18, there were 22 of them. Given that a majority of the respondents are Czechs, it is astonishing that they are able to communicate via Skype in a foreign language, in spite of their presumed mistakes in pronunciation, vocabulary and grammar. This proves that even though there were some minor audio deficiencies in voice calls registered (see fig. 6 and 10), a conversation in a foreign language can still be successful.

Another question that I prepared was to determine what type of communication respondents prefer. Skype offers three types: chat, voice call and video call, or video-conference. We can see clearly from the diagram in figure 19, that the most often used type is the voice call (30 votes), although video calls got a comparable number of votes (25). The least used type is chat (only 12 votes). I presume we can expect this kind of result when evaluating a program that has been primarily developed for voice calls. Still, it is apparent that despite its relatively short operating time, video calls are rapidly becoming more and more popular.

The question that follows was a simple yes/no question, the function of which was to separate those respondents who actively use video-conferencing from those who do not. According to the diagram in figure 20, approximately half of the respondents use video-conferencing. These people were then navigated to the section with additional questions

about video-conferencing before they filled in their personal data. Others were navigated straight to the page with questions to their person then.

Just before proceeding to the video-conferencing section and the last set of questions, there were three open fields, where each was related to one particular question. Respondents were then allowed to type in their opinions on these optional questions in their own words. I made them deliberately optional because it is often hard to write in one's own words about something he/she may know nothing about. Moreover, filling in a questionnaire always becomes dull eventually and I was afraid that it might have discouraged the respondents from finishing the questionnaire. I will now present a list of all the responses to the following questions.

In the first question I suggested a hypothesis of using Skype for educational purposes and asked people what are the advantages in using Skype for educational purposes in their opinion. Answers were as follows:

1. "conference calls from anywhere, sending files"
2. "independency of the place, possibility of communication in untraditional times"
3. "It can lower the expenses of schools."
4. "possibility of transmission of presentations with video, interaction, prize"
5. "quick settlements"
6. "independency of the place"
7. "conference calls, better settlements, independency of the place"
8. "friends can help"
9. "quick connection, independency of the place"
10. "independency of the place, possibility of making conferences"
11. "time variability, topicality when compared to current learning methods"
12. "possibility of contact someone immediately, conferences, mass discussions"
13. "conferences in foreign language, almost immediate connection (when compared to email"
14. "independency of the time and finances"
15. "possibility of communication with foreign students"
16. "learning from any place with an internet connection, education of disabled or sick students from their homes"
17. "independency of the place"

18. "easy talking and explaining, pace of telling information"
19. "independency of the place"
20. "development of vocabulary, independency of the place"
21. "video conferences, remote studying"
22. "accessibility, free of charge"
23. "time saving, flexibility, lower financial expenses"
24. "possibility of discussing solutions with classmates, others can explain things"
25. "quick pace of gaining knowledge"
26. "cheap and adjustable"
27. "visual contact with a person who wouldn't be able to come into class in person"
28. "easy accessibility, video call is for free"
29. "possibility of education physically disabled people, place independency"
30. "easy installation, possibility of calling from anywhere"

The second question was further focused on the hypothesis of using Skype for educational purposes. This time, it dealt with what possible problems might occur when talking about education via Skype. Answers to this were as follows:

1. "necessity of satisfactory internet connection, necessity of owning a computer"
2. "depersonalization while there already is little personal contact"
3. "possible technical problems"
4. "dependence on internet connection"
5. "I do not see any disadvantages."
6. "None."
7. "It is tempting."
8. "power consumption, dependency of the electrical and internet connection"
9. "dependency on internet connection, laziness"
10. "necessity of satisfactory internet connection, necessity of having microphone"
11. "video lag, noise, insufficient contact"
12. "Skyping instead of studying"
13. "all the good features are charged with fees"
14. "small adjustability, unintuitive controlling"
15. "necessity of satisfactory internet connection, internet accessibility"

16. "dependence on internet connection"
17. "lack of physical contact, possibility of distortion of information, outages"
18. "bad picture quality"
19. "impersonal, lack of discipline, bad control"
20. "I haven’t consider using Skype for educational reasons."
21. "possibility of an information leak"
22. "lack of personal contact with classmates"
23. "internet fees, power consumption"
24. "paid webcam feature during video-conference calls"
25. "lack of physical contact, internet and its stability"

The third and final question from this section was designed to leave some space for free comments about Skype. People were allowed to say anything that came to mind when talking about Skype. As above, I will list all the comments relevant to Skype or video-conferencing.

1. "I am very satisfied with Skype - it surpassed even ICQ, Facebook and other chatting apps with its controlling."
2. "In my opinion, it has a little chintzy design."
3. "I prefer ICQ."
4. "A program for everyday work in a work or during studies."
5. "An outstanding communicator in case that it is not possible for us to meet the other person."
6. "I am looking for something better."
7. "I appreciate it very much; I use it in all parts of the world for a communication with my family. I miss a possibility of recording message and back replaying and bad form of sharing picture, so that the other person could see what I am talking about when I am talking to more people on the other side. I often do not know who is talking. It is not very distinguishable when more people are talking."
8. "I like sending SMS for free."
9. "I think Skype is one of the last surviving apps after the launch of Facebook."

The next few questions were dedicated to those who ticked that they use video conferences. Since I personally do not have much experience with video-conferences with more than three people via Skype, I wanted to examine what other problems we should take into account concerning this issue. It is worth noting that this set of questions was visible only to 32 people.

The first question focused on determining how many of the respondents who use video-conferences prefer them to normal telephone calls and for what reason. In this question, there was only one option available. In addition, one of the choices was typing in one's own reason. In this particular case, I place all the other respondents in the group of "others", so that it becomes apparent what is the total count of people using video-conferencing out of the total number of respondents to my questionnaire.

According to the diagram in figure 21, only a few people (4) ticked that it is because of the eye contact (We discussed the problem with the eye contact during video calls in the theoretical part). The choice of the possibility of seeing a friend or a relative gathered 24 votes. Lastly, three respondents claimed that they use video-conferences, but do not prefer them. Among other comments I also collected the following comment: "I don't have to switch between all those windows and write; I settle things easier by speaking."

The other question was to clarify just how many of users of video-conferences believe that they could entirely replace the current attendance educational system. The possible answers were "yes/no" and "not sure", since it is quite hard to imagine such circumstances. As is apparent from the diagram in figure 22, many people (15) think it may be impossible to implement such radical change. Nonetheless, almost one third of the people asked (10) do believe that it would be possible. The remaining 7 people out of 32 were not sure.

As I mentioned in the previous paragraph, it is quite hard to imagine a functional educational system through the use of video-conferencing. Therefore, all the people were allowed to support their opinions with arguments. I will then react to the arguments in the next part of the thesis. Here, I will just list them. Those who ticked "yes" added the following arguments then (there were only three of them):

1. "Only lectures, not seminars would be possible."
2. "It is an advantage for disabled students "
3. "There is better accessibility of information and a possibility of visualization."

Now, let me present the arguments of those who were not sure about their decisions. I gathered two answers so far.

1. "On one hand, it allows to make a contact with a specialist. On the other hand, there is no guarantee that students will learn as they are expected to.
2. "It has its pros and cons. An advantage is a possibility of contacting any place and anyone on in the world. But, there is not a physical contact where teacher can control the behaviour of students. For example, they cannot take tests from students in case somebody is cheating."

Lastly, let us read what problems were envisaged by those who did not recommend video-conferences as a teaching method.

1. "At home, people hardy force themselves to work that systematically; moreover, a life interaction with friends and teacher would be missing. Not to mention that most people would not go anywhere all day long unless they were obliged to attend the school."
2. "It wouldn't substitute the current system, because staying focused and being able to understand everything during a lecture via video-conferencing is very hard. Perhaps some people wouldn't mind, but I would. I can imagine lectures, although I'd still miss a physical contact of the lecturer. Seminars and exercises, then, I cannot imagine at all."
3. "I love Skype. Nevertheless, an attendance learning is an Experience! I think that teachers should learn how to operate the technical devices more; they should give us an opportunity of learning according to our own possibilities. If I cannot go to lecture in person, we should have an opportunity to watch the lecture online and discuss it via Skype instead of pointless displacing of ourselves from one place to another. Still, Skype shouldn't replace the current system entirely. Only one-to-one lecturing should be an exception. This way is acceptable and often suitable for both.
4. "It is hard to orient oneself in a situation where more people are talking at the same time. It is a possible alternative. Nevertheless, it could get very difficult when there is a larger group of students.

5. "I think there would be too many troubles with maintaining the internet connection. Also, there would be lack of focus from side of students, provided that they were allowed to join the lecture/seminar from home."
6. "It is still better to have a personal contact."

The final set of three questions which was completed by all the respondents who participated in the questionnaire was intended to sort them into groups according to their gender, age and their occupations. By doing so, I was able to monitor the differences in the answers of respondents, their experience and enthusiasm for the topic of Skype and video-conferencing in respect of those attributes.

According to figure 23, the questionnaire was filled out by 94 people, out of which there were 59 women and 35 men. In another words, the ratio of women to men was approximately 2 to 1. I note again that it was not my intention to have equal numbers of respondents according to gender and that I left the results concerning such aspect open.

As can be seen from figure 24, the distribution of those whose age is between 20 and 35 years received most of the votes, altogether 63 votes. This covers all the potentially beginning teachers, university students, those who work, at least those who are in the middle of working. The second largest group, which, however, received considerably less votes, is the group of 15 to 19 years old people. These could mostly be labelled students. This includes students of higher secondary schools, beginning university students, and a few of those who just started working or those who are currently unemployed. Unfortunately, there were not enough votes from the other groups. 36 - 49 groups got only 6 votes, there were only three respondents 50 years old or older, and only one respondent whose age was below 14. We can also note a small mistake in the questionnaire which could not record 14-year old people. Nevertheless, the most essential groups I was interested in were those from 15 to 49 years old. Nevertheless, I also will pay some attention to the three respondents who ticked "50 years and older" because of their presumably large experience and wisdom.

The very last question examined the occupation of each respondent and sorted them out into the preset groups. According to figure 25, the largest group with the most votes (33) consisted of university students of any specialization. This group is arguably the most beneficial for my research, not just because it received the largest number of votes, but also because it consists of people who are most able in judging new possibilities such as implementing video-conferences into the standard educational system.

The second largest group was made up of secondary school students (18). These may not be as experienced in a field of science, teaching or communication. However, they represent the group which arguably knows best about being involved in the traditional attendance school system. They can observe teachers and their methods of teaching. Moreover, secondary school students were exposed to the Internet and its possibilities much sooner than any age group that followed in my list. At the same time, they should be much more autonomous than the group of those aged 14 years and below. We can see that from their bringing new material and new information into classroom all the time.

Then, there were only few of those who ticked other options. According to figure 25, there were three unemployed people, another three who work in administration, another three workers, and, unfortunately, only three workers in education which included teachers, tutors, and so on. Additionally, there was one artist among the respondents, one manager, 8 businessmen, four pensioners and 17 whose occupation was not listed or who did not want to share the information.

AD. Figure 3

Concerning the choice of using more than one client for chatting and voice communication, I already mentioned that some other programs may offer some features that are more important to a certain sort of users. Also the reason for using more than one client for everything could be, because most of the clients are in competition with each other, and so people registered in, let us say, MSN cannot contact users registered in Skype and vice versa. Only social networks such as Facebook, Twitter or Google+, which differ from the clients not only by their relatively young age of operating, but also by their different architecture, can be synchronized with communicational clients such as Skype, Yahoo, MSN, and so on. Actually, it is the clients that offer the synchronization with the social networks. One social network, then, cannot communicate with another social network since they are also in competition with each other.

The reasons why to use clients like Skype instead of social networks like Facebook are simple. For one reason, many social networks offer neither a possibility of starting a video-conference, nor do they have any capacity to store and share files. Only Google+ is a perfect exception that contradicts what I just said - it offers file sharing, is really well designed, and it also is capable of handling video calls. Nonetheless, there still is another reason why the normal clients are more suitable, and that is, that all the social networks

primarily store all information online including the management of themselves. Therefore, in case of an outage, there would remain literally nothing to work with. All the potential users - students and lecturers would be cut off from each other and even from their personal materials and notes.

AD. Figure 7

This feature mostly occurs when a connection speed is not sufficient, thus packets sent/received contain only parts of what was meant to be transmitted. Skype, however, does not simply cut the word in the middle when it recognises that its digitalized form exceeded the limit provided by broadband. It deliberately tries not to interrupt the transmission, and so every time there is a free packet ready for sending, it fills it with another fragment of information and sends it.

AD. Figure 9

Emergency power supply is one of the solutions in order to prevent the possible loss connection due to power failure. It is a part of every laptop. When considering other devices capable of making video calls – smart phones – I mentioned some reasons why those which do not have an emergency power supply, cannot provide such comfort. There remains, however, yet another and quite common way of connecting into Skype. I am talking about personal computers. Those often lack any supporting power source. Therefore, losing a connection in the middle of a conversation because of a power failure is quite possible when using a PC. In future, we may expect that more and more devices will be equipped with an emergency power source.

A larger problem might occur with the Internet connection itself. In a case of power failure all the electronic devices without their own power supply will shut down, thus even modems, should there be any. We could assume that major institutions and educational facilities will have the Internet connection secured so well, that even a power failure would not cause a failure of the connection. Nevertheless, there still is a problem with every student who will need his/her own Internet connection in order to sign up for the call from a remote location, where they have to connect via a local Internet connection. There are many cases where a modem is needed in order to be able to connect to the Internet. As of this moment, it lies in learners' personal judgement to decide from which place they will

connect in order to participate in a video-conference with a minimal risk of becoming disconnected. Of course, there is not such a risk of a loss of connection as long as we manage to connect via a secured and often stable provider.

AD. Figure 16 (few adjustments)

It remains an open question whether developers should let users to have total control over applications. Some developers believe this might lead to a loss of popularity for their apps. This certainly is true. Nevertheless, the more power users gain, the more unstable each individual version of the application becomes, owing to unofficial personalized tweaking. We can see how it may become a still bigger "problem" when we compare two well-known operating systems - Microsoft Windows and Mac OS X from Apple Computers. Windows represents a system which can be tweaked at will by users. Microsoft only provides a preset profile after a clean installation of the system. From that point on, we can change almost anything except for the base skeleton, and in some cases even that as well. Users do not even need to be skilled in programming to customize their Windows systems. There are literally thousands of utilities that allow users to change their operating systems. When we talk about Mac OS X, it offers nothing more than what the developer had put into it. Mac users could then be a little disappointed that they are not given any large freedom in personalizing their computers. Yet, they do not need to fear any instability caused by malfunction of any plug-in that was originally installed to enhance their app. From this reason it is clear that applications that require online status in order to run properly should be made as stable as possible, and to do so, developers of such apps are forced to limit the tweaking options of users to minimum.

5. IMPLICATIONS

After covering the results of the questionnaire, it is time to examine further what are their implications. First of all let me offer some comments on some of the points of the survey. Then, I will make a summary of all the implications that I noted and make a commentary about the possibility of teaching via video-conferencing with a focus on Skype. This chapter also contains limitations of my research and some additional suggestions on how to proceed in further research.

Implications for Teaching

From the research, it is apparent that not many of the participants are extensively familiar with Skyping and the video-conferencing function which it offers. Therefore, before launching any kind of teaching using video-conferencing, there would be needed to provide a theoretical manual about each aspect of such remote communication. For example, dispositions of all the students and lecturers involved in the video-conference should meet hardware criteria which includes appropriate headset with microphone, webcam with suitable resolution, device on which the program runs and also a sufficient internet connection. Then, a set of testing classes with a use of video-conferencing should be performed unofficially with a possibility of a physical support of any details that the first video-conference classes require. Consequently, any missing piece of equipment or a methodology part would have to be replaced by any virtual feature of such function that is possible to administer remotely.

Skype may be a superior application compared to others which offer many of its features to some extent. Nevertheless, most people use it solely for an informal communication with their friends and relatives, which does not differ very much from the purpose they use other such clients. Moreover, although arguably the best international software for video-conferencing, Skype is still not a very specialized application for teaching purposes. It does not provide one participant of a conference to be able to have control over the rest of the participants in all ways of interaction the application offers.

In regard to mother tongue versus foreign language, there was not recorded any significant limitation in regard to ability to understand words in both a written or spoken form. A special research focused on this feature, however, was not performed. Therefore, I would not start any kind of English class without a reliable certification of this

phenomenon. The results implicate that the preferred method of communication is voice calling.

The research shows us that many of its participants worry of a possibility of leaking of data (see figure 16). However, this does not necessarily mean that they would worry about a possibility of leaking some information from a video-conference lecture. While this might be a problem in research facilities where such information could be a target of internet attackers, it should not be very large problem in secondary schools and some universities where many of methodological procedures and facts are commonly shared. Moreover, according to Garfinkel (2005), the probability of a successful hacking of the progressing video-conference is quite low, unless it is done by a professional (Garfinkel, 2005, p. 4).

While there is an undisputable preference of Windows platforms compared to Mac, Linux or others in the Czech republic, an importance of running Skype on machines with Microsoft Windows operating system is not necessary due to Skype´s compatibility with other systems. This fact only advert to a propriety of using Windows compatible tools which have supportive purpose in a given type of lecture. For example, if teacher wishes to teach use English based testing program during the video-conference class, it should definitely be compatible with all the platforms, particularly with Windows.

The survey also implies that some of the respondents consider video-conferencing as an easy way to reach a teacher - expert who would not otherwise be able to give his/her lecture in person for every student of the lecture. However, the biggest problem seems to be mutual contact of teacher with all the students and the students with each other at the same time. It has two major problems that would have to be dealt with before launching such video-conference teaching. Firstly, a teacher should be able to have the control of who are students allowed to speak to during an exercise or a seminar. Secondly, the layout of contacts participating in the video-conference should be lucid, thus, the thumbnails of participants would have to be much smaller and well-arranged and at the same time, there would have to be clearly visible, who is speaking or who is about to speak.

Limitations of the Research

There are certain number of limitations of this research. One of them is a low number of respondents who participated in the filling of the questionaire. In order to collect a satisfactory amount of data, the numbers of respondents would have be count

among thousands, since the numbers are gradually weakening due to more specific questions which are not relevant to some respondents. In addition, all the respondents would have to be comparably balanced in regard to their occupation, which would ensure a reliable scales in regard to their purposes of using video-conferencing. In addition, there would be needed an equal number of male and female participants in the research. The participants would also need to be perfectly balanced in regard to their age groups.

Another limitation is in low number of questions and the available answers in questionnaire. The "other" choice, which was one of the answers to most of the questions in the present questionnaire is not sufficient to record all the relevant data in case of using the method of statistics. Moreover, the choice could mostly provide a comfort of anonymity for those of respondents who do not really wish to be part of concrete information in statistics.

Furthermore, one of the limitations is also a fact that many of the respondents were uninitiated and uninformed in possibilities of video-conferencing which eventually could led to a distortion of the results. To ensure a higher awareness of the topic of video-conferencing, a practical lecture would have to be held. Participants of the lecture could then be questioned about their opinions. In addition, there would be a record about advantages and weaknesses of the used method. Moreover, a technical accessories used during the practical video-conference lecture would have to be same for every participant.

Suggestions for Further Research

From the experience of how this research proceeded during the stage of collection information I would recommend following improvements. Many of the questions were designed with a regard of being simple and easy answered. Therefore, the collected data were mostly general, in consequence of which there were not many situations in which the features of Skype and video-conferencing might have been described more thoroughly and concretely. Moreover, I would recommend to set up such conditions in which it would be possible to individually analyse answers of each respondent in regard to his/her personal experience with video-conferencing as well as his/her relation to education (e.g. status of student, teacher, and so on).

In order to expand the research and its limitations, there would have to be more questions asked in the questionnaires. Consequently, participants of the research would have to be willing to spend more time to fill out the questionaire. Another suggestion of

enhancement would be to address people from more parts of the world to participate in research. This would require a distribution of questionnaires in many languages mutations, while there would be only one common table for the submitted answers eventually.

To secure more valid results, there would have to be balance in kinds of respondents in regard to their gender, occupation, level of experience with video-conferencing, age group and their distribution in regard to their nationality and language level. What is more, all the respondents would have to answer all the questions, which would to make all the questions obligatory.

In order to ensure the maximum reliability, the research would have to be performed several times. In addition, it would be necessary to perform the research twice on the same respondents in a time interval before and after their participation in a practical situation of using video-conferencing for educational purposes. Then, apart from the descriptive results collected during a recording of the practical video-conference lecture and consequential evaluation of the effectiveness of such lecture, there would be a statistic record of the participants´ evaluation of using video-conferencing for educational purposes before and after their personal experience with such lecture. This would serve as a feedback from those who provably had an actual experience with the lecture. The results from the situations before and after could then be compared. This whole process would also required placing such questions within the questionnaire which would give respondents an opportunity to evaluate the class with a use of video-conferencing. To ensure even bigger reliability, such survey would have to be performed several times on different groups of people.

Another improvement, which would increase the number of those respondents who respond to the specific questions about video-conferencing, is choosing such respondents are familiar with video-conferencing for the entire survey. In other words, all the participants of the research would have to be chosen in advance.

It is worth noting that at least some social networks such as Google+ have a bright future ahead of them and eventually they could meet the requirements needed to host remote lectures. However, before that can become a reality, the Internet connection would have to become accessible literally from anywhere and, more importantly, it would have to become much more stable than it currently is. In other words the probability of a lecture failing when using digital technology because of technical problems would have to become no greater than the probability of a lecture failing now when using traditional methods.

6. CONCLUSION

The topic of the thesis introduced a video-conferencing and its features for the purpose of teaching and learning with a focus on English language. The theoretical part described communication client of Skype as a main representative of clients providing video-conferencing function. The theoretical background also covered the basics of technological features in regard to Skype. Moreover, it covered an analysis of advantages and problems of using video-conferencing in teaching process.

The main aim of the research was to provide the information about possibilities of a communication via video-conferencing. In consequence to that, the focus of the research was in examining the scales of a practical use of video-conferencing among the public, as well as their opinions on a possibility of using video-conferencing for the purposes of teaching and learning. The research itself was preceded by a preparation of questionnaires in written form, which were subsequently transformed into electronic from and revising distributed among public to filling out. From the results there was apparent that in general, there are no technical problems in quality of communication, however, there are several doubts about using the method of communication via video-conferencing in teaching process among public, which according to the results is mostly influenced by traditional thinking. Nevertheless, due to several limitations, the research could not be considered as verified. The research was limited by a low number of respondents and low number of concrete questions in the questionnaire. In order to verify the results and expand the research, it would be necessary to expand the number of respondents of respondents, choose approximately equal number of respondents of all the relevant types of occupation, balanced gender and age groups. In addition, it would be necessary to include more specific questions in the questionnaire, and to repeat the survey several times.

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APPENDICES

Appendix A

Questionnaire in English

Page 1.

Skype Questionnaire (ENG)

Good day,

this questionnaire was designed for the purpose of data collection for the research in terms of my Diploma Thesis which concerns with an using of Skype and Video-conferencing in terms of teaching English. My name is Mark Tamaru and I study the Faculty of Education in the University of West Bohemia . The questionnaire is solely annonymous and the collected data will be used merely for statistic purposes in the practical part of my thesis. It is separated in several sections which will occur according to how much do you use Skype. The overall time needed for filling it out will take you about 5 to 10 minutes.

Please fill out each section of questions carefully. Proceed to the next page if necessary, and finally submit the filled questionnaire. Note that questions with rounded choices can only have one option, those with square checkboxes have more than one opinion available. In some questions, You will be encouraged to write Your own answer.

Thank you for your cooperation.

(note: The deadline for filling out the questionaire is set to 5th June till 22:00. Please do not submit anything past this term. Thank you.)
* Required

Do you Skype? *

Yes

No

Continue »

Page 2.

* Required

Please proceed with following questions.

If so, what for do You use Skype? *
(multi-optional)

- [ ] at work
- [ ] at studies
- [ ] contact with friends
- [ ] contact with family
- [ ] Other:

Why Skype? *
(why not other apps like ICQ, Yahoo, MSN... ?)

- ( ) I use other chat and voice programs as well.
- ( ) It is for free.
- ( ) Other:

How long have you been using it? *

- ( ) less than 1 year
- ( ) 1 - 3 years
- ( ) 4 - 6 years
- ( ) 7 years and more

On which platform do you run Skype? *
(multi-optional)

- [ ] Windows (XP, Vista, 7, etc.)
- [ ] Mac OS X
- [ ] Mobile phone
- [ ] Other:

Voice Calls

How often have you encountered following problems? *
1 = rarely 5 = almost every time

	1	2	3	4	5
Noise	○	○	○	○	○
Stuttering of sound	○	○	○	○	○
Silent voice	○	○	○	○	○
Echo	○	○	○	○	○
Lost connection	○	○	○	○	○
Mishearing of certain words	○	○	○	○	○
Too many people speak at the same time	○	○	○	○	○

Video Calls

How often have you encountered following problems? *
1 = rarely 5 = almost every time

	1	2	3	4	5
Dark picture	○	○	○	○	○
Picture lagging	○	○	○	○	○
Lost connection	○	○	○	○	○
Low quality video	○	○	○	○	○

General Questions

In your opinion, what are the disadvantages of Skype? *
(multi-optional)

- [ ] design
- [ ] layout of control switches
- [ ] contact list layout
- [ ] few preferences
- [ ] posibility of data leak (privacy / security)
- [ ] overall architecture
- [ ] Other:

Decide: Email vs. Skype *
Which is more acceptable /suitable for your needs?

- ( ) Skype
- ( ) E-mail

What language do you use? *

- ( ) mother tongue
- ( ) foreign language
- ( ) both

Which of the following do you prefer: *

- ( ) chat
- ( ) audio call
- ( ) video call / video conference

Do you use video conferencing? *

- Yes
- No

In your opinion, what are educational advantages of Skype?
write keywords (e.g. larger classes, place independence, etc.)

What are the biggest problems of using Skype as means of teaching?
write keywords (e.g. electricity consumption, dependence on internet, etc.)

Any other comments on Skype?

« Back Continue »

Page 3.

* Required

Video Conferencing

Before proceeding with the last page, I would like to ask you a few more questions.

If so, from what reason do you prefer video-conferencing before chat or voice calls? *

- ○ eye contact
- ○ I am able to see my relative / friend
- ○ I do not prefer video conferencing
- ○ Other:

In your opinion, could video-conferencing be used as a replacement of a current presence educational system? *

- ○ Yes
- ○ No
- ○ I am not sure

Please support your opinion with some arguments.

« Back Continue »

Page 4.

* Required

Before submitting the questionnaire, please fill out following points.

Your sex: *

- man
- woman

Please choose your age group. *

- less than 14 years
- 15 - 19 years
- 20 - 35 years
- 36 - 49 years
- 50 years and more

Occupation: *

unemployed

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Appendix B

Questionnaire in Czech (distributed among public)

Page 1.

Skype Questionnaire (CZ)

Dobrý den,

tento dotazník byl navržen pro sběr dat k výzkumu v rámci mé diplomové práce, která se zabývá použitím Skype a videokonferencí s ohledem na vzdělávání. Dotazník je zcela anonymní a posbíraná data budou určena pouze ke statistickým účelům v praktické části mé diplomové práce. Je rozdělen do několika sekcí, které se zobrazí v závislosti na tom, jak dalece Skype používáte. Celkový čas potřebný k jeho vyplnění Vám zabere zhruba 5 až 10 minut.

Prosím vyplňte pečlivě jednotlivé sekce s otázkami. Pokud je třeba, pokračujte vždy na další stránku, a nakonec odešlete dotazník tlačítkem "Odeslat". Všimněte si, že otázky s kruhovými výběry mají pouze jednu možnou odpověď, čtvercová zaškrtávací pole nabízejí více než jednu možnost. V některých otázkách budete požádáni o vepsání vlatní odpovědi.

Děkuji za Vaši spolupráci.

(poznámka: Mezní termín pro vyplnění je stanoven na 5.6.2012 do 22:00. Po tomto termínu prosím již nevyplňujte. Děkuji.)

Mark Tamaru

* Required

Používáte Skype? *

- ◯ Ano
- ◯ Ne

Continue »

Page 2.

* Required

Prosím pokračujte následujícími otázkami.

Pokud ano, při čem Skype používáte? *
(více možností)

- [ ] při práci
- [ ] při studiu
- [ ] kontakt s přáteli
- [ ] kontakt s rodinou
- [ ] Other:

Proč právě Skype? *
(proč ne ostatní aplikace ke komunikaci např. ICQ, Yahoo, MSN?)

- ( ) používám i ostatní chatovací a hlasové programy
- ( ) Skype je zdarma
- ( ) Other:

Jak dlouho Skype používáte? *

- ( ) méně než 1 rok
- ( ) 1 - 3 roky
- ( ) 4 - 6 let
- ( ) 7 let a více

Na jaké platformě Skype používáte? *
(více možností)

- [ ] Windows
- [ ] Mac OS X
- [ ] mobilní telefon (iOS, Android, ...)
- [ ] Other:

Hlasová komunikace

Do jaké míry jste se setkali s těmito problémy? *
1 = vyjímečně 5 = téměř pokaždé

	1	2	3	4	5
šum	○	○	○	○	○
zasekávání / přeskakování zvuků	○	○	○	○	○
ozvěna	○	○	○	○	○
přerušení spojení	○	○	○	○	○
přeslechnutí některých slov	○	○	○	○	○
příliš mnoho lidí mluví najednou	○	○	○	○	○

Video hovory

Do jaké míry jste se setkali s těmito problémy? *
1 = vyjímečně 5 = téměř pokaždé

	1	2	3	4	5
tmavý obraz	○	○	○	○	○
zpožďování videa	○	○	○	○	○
přerušené spojení	○	○	○	○	○
nízká kvalita videa	○	○	○	○	○

Obecné otázky

Jaké jsou podle vás nevýhody Skype? *
(více možností)

- [ ] design
- [ ] rozložení ovládacích prvků
- [ ] rozložení kontakt listu
- [ ] málo nastavení
- [ ] možnost úniku informací (soukromí / bezpečnost)
- [ ] celková architektura
- [ ] Other:

Rozhodněte: Email vs. Skype *
Který více splňuje Vaše požadavky?

- ( ) E-mail
- ( ) Skype

Jaký jazyk v Skype komunikaci používáte? *

- ( ) mateřský
- ( ) cizí
- ( ) obojí

Co z následujícího preferujete? *

- ( ) chat
- ( ) audio hovor
- ( ) video hovor / video konference

Co z následujícího preferujete? *

- chat
- audio hovor
- video hovor / video konference

Používáte video konference? *

- Ano
- Ne

Jaké jsou podle Vás výhody Skype ve vzdělávání?
pište heslovitě oddělené čárkami (př. větší třídy, nezávislost na místu, atd.)

Jaké jsou podle Vás největší nevýhody Skype při vzdělávání?
pište heslovitě odděleně čárkami (př. spotřeba energie, závislost na int.připojení, atd.)

Nějaké další poznámky ke Skype?

« Back | Continue »

Page 3.

* Required

Video konference

Ještě před pokračováním na poslední stránku bych se Vás rád zeptal na několik otázek.

Pokud dáváte přednost videokonferencím před běžným chatováním nebo běžnými hovory, z jakého důvodu především? *

- oční kontakt
- možnost vidět blízkého či známého
- nedávám video konferencím přednost
- Other:

Mohli by podle Vás video konference nahradit současný prezenční výukový systém? *

- Ano
- Ne
- Nevím

Podpořte prosím Váš názor argumenty.

« Back | Continue »

Page 4.

* Required

Ještě než odešlete dotazník, vyplňte prosim následující body.

Vaše pohlaví: *

- muž
- žena

Vyberte prosím Váš věk. *

- méně než 14 let
- 15 - 19 let
- 20 - 35 let
- 36 - 49 let
- 50 let a více

Zaměstnání: *

nezaměstnaný

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Appendix C

Classmate PC with a Twistable Display

(Intel Tablet, CNET, November 7, 2008,
http://www.news.cnet.com/i/bto/20090112/classmate-convertible420.jpg)

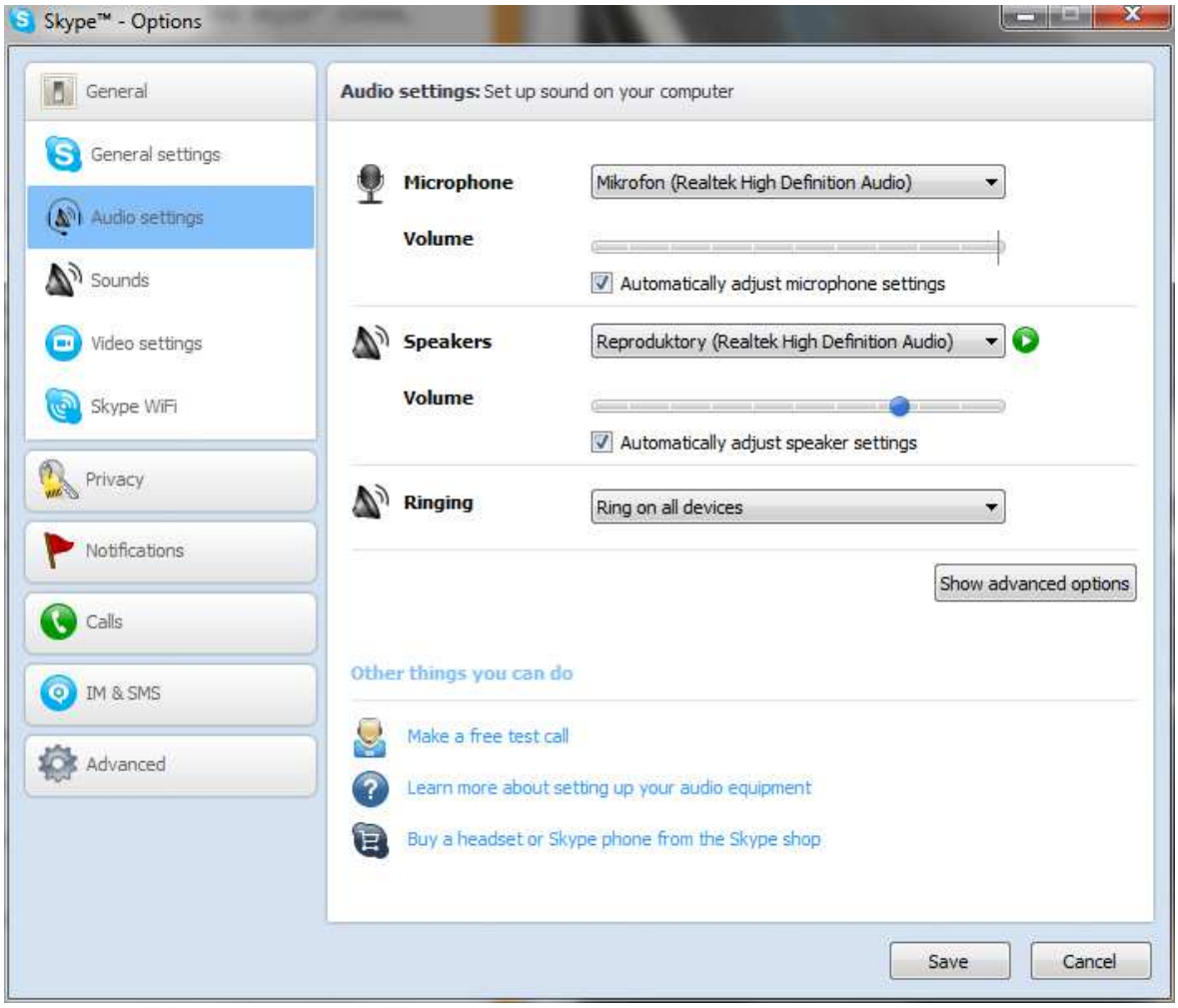
Appendix D

Adjustable Effects of Webcams Using a Special Software

(Add Effects - Backgrounds Effects, WebCamMax, 2012, http://www.webcammax.com/screenshots.html)

Appendix E

Skype - Audio Settings of Microphone and Speakers



SUMMARY IN CZECH

Tato diplomová práce se zabývá tématem definování výhod a nevýhod video konferenčních hovorů, jakožto metody pro výuku a studium. Předmět tématu video konferencí, jakožto metody sběru dat je popsán na konkrétním internetovém komunikačním klientovi představovaném jako Skype. Hlavní cíl výzkumu je poskytnout informace o možnostech komunikace s využitím video konferencí, a následně prozkoumat měřítka praktického uplatnění videokonferenčních hovorů mezi veřejností, stejně tak jako názory lidí na možnost použití videokonferencí pro účely vyučování a učení. Výzkum je realizován prostřednictvím 94 náhodných respondentů na dotazník v českém jazyce umístěném na internetu. Každý z respondentů vyplní dotazník. Data nasbíraná z dotazníků jsou poté statisticky zaznamenána a prezentována ve formě diagramů, jejichž aspekty jsou dále analyzovány s ohledem na četná omezení výzkumu. V poslední části diplomové práce jsou vyvozeny závěry, důsledky zjištění a rady pro učitele stejně tak jako pro budoucí výzkum.