INTERVIEW METHODOLOGY IN DIGITAL FORENSICS INVESTIGATIONS

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Abstract: *The main purpose of the digital forensics interview is to gather necessary information from a victim or perpetrators regarding particular details associated with an investigation [1]. A digital forensic investigator will be interested in gathering information and conducting interviews regarding computer crime, child pornography, fraud, hacking, and other digital crimes. This publication outlines gathering information for an interview, methods of conducting the interview, and recording format, including figures to allow the investigator with resources at any time.*

Keywords: *interview, digital forensics, investigation*

1. INTRODUCTION

Preparation and information gathering before conducting an interview are the most important features of effective interview questioning [1]. Before even asking the first question, investigators must know potential facts of the case and background information on the victim or perpetrator to be interviewed [2]. Also, interviewers should know victims' or perpetrators' personal information, prio rcriminal sentences, and professional status. All this information can help to develop a methodology to create a standardized interview method. During the interview, all this collected information can be used to build relationships and connections with interviewee, along with asking questions and investigating any contradictions [1]. Digital forensic investigators will be interested in gathering information regarding computer crime, child pornography, fraud, hacking, and other digital crimes. This paper will outline gathering information for an interview, methods of conducting the interview, and recording format, including checklists, forms, and charts to allow investigator with resources at any time.

2. INTERVIEW INFORMATION AREAS

The main purpose of the digital forensic interview is to gather necessary information from victims or perpetrators regarding particular details associated with an investigation

[1]. Different types of crimes such as computer crime, child pornography, fraud, hacking, and etc., require different interview methods. All those crimes can be performed using computers or mobile devices including smart phones and digital cameras. To have a successful interview, the interviewer should collect the following information:

- background details regarding the victim [3]
- the focus of the investigation [3]
- the possible perpetrators and their background information [3]

During interviews, interviewers should try to recognize new details and other witnesses that could help in resolving the case. Different interview techniques exist but interviews usually should try to answer simple questions such as who, when, where, what, how, and why [1]. The initial interview is typically the best chance to collect basic evidence from perpetrators who used computers and mobile devices as well as information from victims [4]. Also, the initial interview can discover whether information devices are password protected to prevent outside access. In the case of child pornography, information should be gathered immediately so that the child can be protected [4]. Also, during the information gathering process search warrant should be obtained. Based on the type of crime, each interview will probe specific questions. Interviewers must be patient and persistent through the interview process [2]. Once the type of crime is determined, the investigator should develop a plan of action including gathering of information [2].

Digital forensic investigators should perform the following tasks when deciding appropriate techniques to use while gathering information about perpetrators or victims in a computer-related crime, child pornography, hacking incident, or fraud:

- evaluate one's own computer skills to avoid being confused by perpetrators or victims who could possibly have higher computer knowledge [3]
- evaluate the computer knowledge of the perpetrators based on all other evidence collected to find out with whom they have been talking [3]
- gather as much detail as possible regarding the hardware and software that perpetrator was using [3]
- gather as much details as possible regarding victim, especially if victim is the child
  In addition, the interviewer should try to gather following information as well [3]:
- perpetrator'sUser Name [3]
- onlineprofile [3]
- Internet Service Provider (ISP) [3]
- email account information [3]
- information on what part of day or night the perpetrators is usually online [3]

3. INTERVIEW METHODOLOGY

After information necessary for the interview is gathered, the interview process can start. Before the forensic investigator interviews the perpetrator or victim, the following must be ready:

- Privacy Act Statement
- List of official papers from interviewee
- Checklist with information gathered prior the interview
- List of questions
- Copies of all official papers planned to show to the perpetrator or victim

- The method of recording interview

The interview should be conducted in a peaceful and comfortable setting. By introducing themselves and their colleague by name, and by speaking to the interviewee using a personal name, interviewers personalize the interview, therefore, making good beginning [2]. Many techniques exist to help the digital forensic interviewer build a relationship and connection during the interview [5]. Considering the interviewee as an individual and cooperating with them in serious and cautious manner enables the interviewer to develop a rapport [5]. Developing rapport with perpetrators or victims during an interview is essential and should be started in the beginning of interview [5]. A good relationship during interview between the investigator and the victim or perpetrators is important to achieving good results [5]. Interviewers should always try to create common ground to make the interviewee relaxed and comfortable. At the same time, interviewers should avoid a heavy-handed approach that enforces their authority. An authoritative approach yields less successful results because it makes victim or perpetrator less comfortable [5]. Also, if victim is a child, the interviewer should talk to a school representative or other child beneficiary who can help explain to the child that an interviewer is coming.

When the interview is conducted with the victim, interviewer should inspire them to tell sequence of events in an uninterrupted narrative [2]. To achieve this flow, the victim should not be hurried and interviewer should carefully listen to and observe the victim. Also, the interviewer should not try to complete the interviewee's unfinished sentences. In the beginning of the interview, interviewers will identify a clear account of the interviewee's version of events [2]. When the interviewee needs to present a huge amount of data, questions should be open-ended. However, when questions are in yes/no format, questions should be closed [2]. When the interviewee is a perpetrator, the interview will be centered directly on the crime that is investigated. Still, in these situations it is recommended to permit the interviewee to present an uninterrupted narrative of the events under investigation [2]. In digital forensics, interview questions should be focused on contents saved on computers, hardware and software, mobile devices, and email accounts [3]. Also, asking questions about the number of computers the perpetrator was accessing and where they are located helps the interviewer to collect more evidence [3]. For example, in an online luring event, questions should be asked about the number and location of computers the victim used to access emails from the perpetrator [3]. In the case of child exploitation, questions should be asked about the number of computers used to create and share child pornography [3]. Also, questions about the number of email accounts that both victim and perpetrator used should be asked [3].

During the interview, the following steps should be carried out:
1. Welcome the victim in a pleasant way [6]
2. Be comfortable and friendly to calm the victim (in the case of a child victim, the interviewer must be extremely cautious not to disturb the child)
3. Introduce yourself
4. Explain to the victim the reason for the visit
5. Clarify the significance and importance of the victim's testimony to the case [6]
6. Check the victim's name, current address, phone numbers, and occupation
7. Ask the victim to tell the story as a narrative [6]
8. Do not interrupt; listen, and take brief notes very cautiously on what the victim says[6]
9. Observe the victim's behavior and body movement

10. Try to be emphatic to motivate the victim [6]
11. Ask additional questions relevant to the case when the victim finishes the narrative, starting with general questions, and moving toward more specific questions
12. Ask specific questions, if child exploitation is involved, about the location of the crime, methods, and any existing computers and other devices [6]
13. Compare the victim's statement with other statements, if they exist
14. Review contradictions, and, if the victim is a cooperative, present them to the victim [6]

When interviewing a child, the interviewer should already have gathered some basic information such as name, age, developmental level, and evidence related to child exploitation before talking to the child. Also, information about contact with pornographic magazines and videos, and pictures on the computer and other devices at home should be gathered before the interview. Figure 1explains the basic interviewer procedure when performing an interview regarding child exploitation.
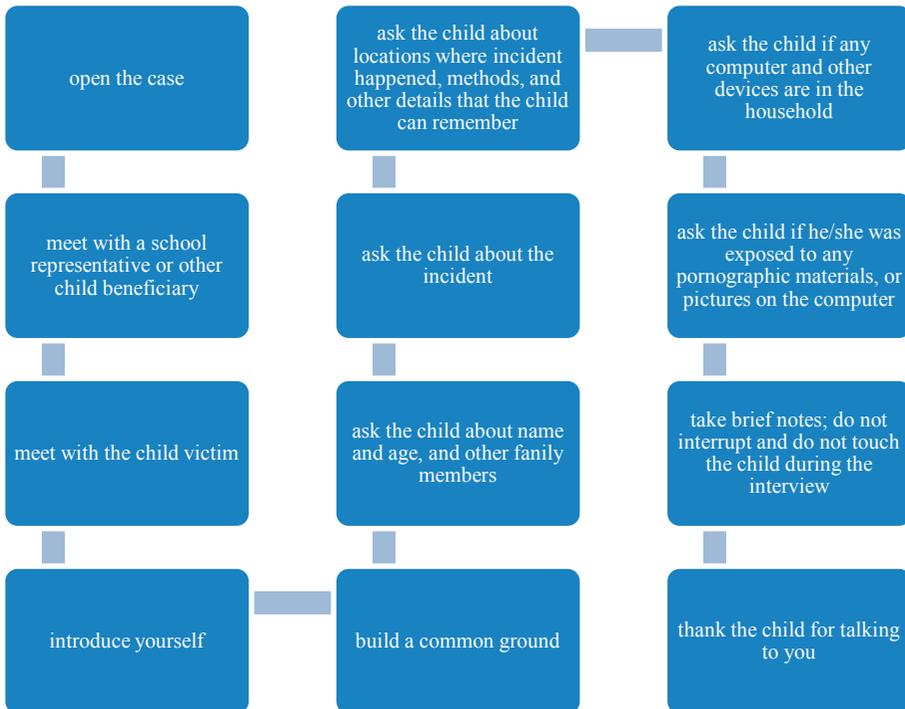

Figure 1. Interview Process with Child Victim

4. RECORD METHODOLOGY

Accurate interview records are important elements of digital forensic investigations and may be important documents to prove the existence of a crime [2]. An interview record can create the foundation for investigative case management conclusions. In some jurisdic-

tions, an interview record is used as evidence [2].Interviews can be documented in several ways. Figure2 shows three interview recording techniques.
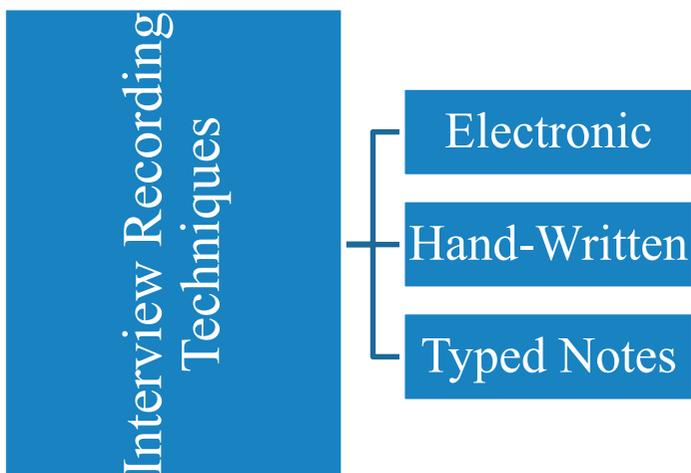

Figure 2. Interview Recording Techniques

When determining which technique to use, the investigator should think about the cost, logistics, the possible effect on those interviewed and any lawful requirements affecting the interview's acceptability [2].

a. HAND-WRITTEN RECORD

For example, hand-written records generated by an investigator through the interview are an appropriate and effective method to document an interview. However, the investigator must constantly and unmistakably document everything that was done, heard, said, and witnessed [2]. Sometimes is not possible to write down each word spoken in the interview. To resolve this issue, the investigator can appoint a specific person to take notes during the interview [2].

b. AUDIO AND VIDEO RECORDING

Using video or audio recording of an interview can be most convincing evidence for a legal proceeding. If a victim denies facts while testifying, the attorney can ask for a video or audio recording acknowledged as evidence, to prove the truth [2]. Sometimes it will take a time for an interviewee to adapt to notion that the interview will be recorded. The interviewer can explain that this type of recording can help protect the victim or perpetrator doing further investigation [2]. Also, some technical difficulties could arise when performing this type of recording, such as the angle of the camera. Therefore, a back-up recording technique should be prepared in the case of technical difficulties [2].

c. TYPED NOTES

An interviewer can appoint another colleague to type notes during the interview. This person must be very accurate and fast in typing notes.

5. WRITTEN REPORTS

After the interview is completed, the interviewer must prepare written report based on recordings. A third-person interpretation represents the interviewer describing his or her recollection of the interview [1]. The report should consist of the date, time, location, and individuals at the interview. In addition, an interview log is one technique for documenting times of important events during the interview [1]. For example, the interview log can document the beginning of the interview, breaks, snacks, and the conclusion of the interview. Written reports should be thoroughly reviewed and compared to original notes because the court can ask to compare the original recording with the written report [1]. In addition, written records must be secured and transported properly to the digital forensic laboratory.

6. CONCLUSION

Interviews, if appropriately and skillfully carried out, can have a huge impact to the success of a digital forensic investigation—providing data and digital forensic evidence that other documents cannot prove. It is important that an interview plan is developed and necessary information gathered before the interview is conducted. Also, the methodology of interview is very important. The interviewer also needs to build rapport with the interviewee in order to get good results. In addition, recording methods of the interview and written reports are essential for further investigation.

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