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DESIGNING CHATBOTS FOR TRAINING PROFESSIONALS IN CHILD EN YOUTH SOCIAL CARE



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INTRODUCTION

Various subjects in child and youth social care, such as sexuality and sexual violence, are quite sensitive, and professionals may experience a certain reluctance to discuss these subjects with their clients (e.g., the young people they work with, as well as their families) and colleagues. An example of such a subject is sexual abuse and unacceptable behavior that may occur with their clients, whether at home, at the youth care institution or somewhere else.

It is essential that youth care professionals do not shy away from such a sensitive subject as sexual abuse and know how to talk about it with their clients in a healthy way. Professionals in child and youth social care should dare to educate on this topic, and be trained to deal with the enormous diversity of young people and parents they encounter in their work.

Research on application of trained methods shows that receiving training on itself is often not enough to develop strong applicable competences about subjects like sexual abuse and to continue to apply these acquired practical skills in the field in the long term. In order to be able to apply 'what is learned' successfully, it is necessary to practice the learned skills in a safe environment, and to regularly refresh those skills. In order to create an opportunity for practicing skills in a safe environment, we have explored the extent to which innovative chatbot technologies can be used to better equip (future) professionals to apply and practice their skills.

CHALLENGES AND OPPORTUNITIES

Opportunity: Train for diversity

Chatbot and conversational technologies offer many opportunities for professionals in child and youth social care to practice the skills needed to discuss sensitive topics. For instance, chatbots can impersonate a variety of profiles, with different genders, ages, backgrounds, cultures, or personalities. Chatbots can be programmed to react to specific cues in sentences, which would trigger different responses of the chatbot, e.g., positive or negative. With a carefully designed repertoire of chatbot responses and triggers, professionals could experience the potential reactions of a variety of personalities. With more traditional training methods (e.g., practice with actors or peers), it can be difficult and impractical to offer such a variety of profiles. The palette of chatbot reactions can have more diversity than what professionals have experienced before, or what their current practical training may offer due to limited resources or possibilities.

Even if the chatbot reactions are not new to professionals in child and youth social care, or are predictable and expected, chatbots provide a platform to experiment with different ways to address different personalities, on top of refreshing one's skills. Such conversational platforms are a safe environment to practice, as no actual clients are impacted by eventual mistakes or missteps in the conversation.

Opportunity: Off-the-shelf tech

A variety of mature tools are available for implementing chatbots, as conversational technologies are extensively researched and well-established in the industry (e.g., for

customer service, or voice assistant). Many tech companies, large and small, offer large sets of off-the-shelf tools, including open-source components, e.g. for intent recognition, emotion recognition, entity recognition, voice recognition, topic recognition, knowledge base for question answering. User interfaces are also available to implement chatbot dialogues without writing a single line of coding.

Challenge: Tractable dialogue structure

Although the technologies offer many possibilities, the success of chatbots for educational purposes largely depends on the quality of the conversation design. This task remains very challenging as the conversation design requires to encode dialogues in a predefined structure of statements and replies. In most applications (e.g. for customer services), dialogues typically consist of pairs of user “question” and chatbot “answer”, or series of user “intent” and chatbot “reaction”. In our case, the chatbots need complex dialogue structures that reflect the complex conversations that may occur between a chatbot impersonating a specific profile, and a professional trying different approaches to adapt the conversation to that specific profile.

We need to design dialogue structures that encode many potential sentences that professionals may say into “intents” that can be detected by the chatbot, to trigger specific reactions of the chatbot. The diversity of potential sentences and “intents” is infinite, and needs to be restricted to a specific scope (e.g., excluding any kind of small talk). The design challenge is to implement dialogue structures that represent the large diversity of sentences in natural conversations, but remain synthetic and tractable by the humans who design the dialogues.

Challenge: Training data

The chatbots need to be trained using carefully chosen examples of sentences that reflect what professionals in child and youth social care could potentially say. Training examples need to represent every detectable “intents” of practitioners, to which chatbots should respond in specific ways. The training examples must first represent the exact topic of a sentence, so that the replies of the chatbot address the right topic. Furthermore, different “intents” may address the same topic, but they can be formulated in ways that should trigger either positive or negative reactions of the chatbot. Each emotional reaction of the chatbot needs to be triggered by a distinct “intent”. Thus collecting the training examples is also challenging: the examples must be written carefully in order to represent the language subtleties that have impacts on a client’s reaction, e.g., differentiating the positive or negative reactions of the chatbot, and differentiating questions and statements.

RESEARCH QUESTIONS

To address these challenges, our chatbot prototype and user study aimed at exploring the following questions:

- What dialogue structure, with consistent sets of “intents” and “reactions”, can support natural and realistic dialogues where a chatbot impersonates a client responding to a professional during a specific session? (e.g., dedicated to screening the client’s exposure to potential sexual abuse)
- What pedagogical purposes could a chatbot provide, considering its technological abilities and limitations?

DESIGNING & PROTOTYPING CHATBOTS

We designed the chatbot prototype together with a) senior professionals in child and youth social care with practical expertise in sexual abuse, b) academics researching and providing education for professionals in child and youth social care, and c) with experts in chatbot technologies.

Our design process had several iterations:

- Brainstorming and use case analysis: We had 2 sessions of 2 hours, with a team of 3 professionals in child and youth social care (trainers (2), professional (1), Levvel/Qpido & IHUB/Altra), 1 lecturer (Pedagogics, AUAS), 1 researcher (research group child and youth social care, AUAS), and 2 chatbots specialists (Digital Society School, AUAS).
- Prototyping dialogue structures: We had an online iterative collaboration, with the same team, using a virtual board (Padlet) and a user interface to implement and visualize dialogue structures (Flow.ai). Two content experts (trainer and lecturer) designed the dialogues in three additional meetings.
- Testing and validation: The chatbot specialists tried different options to implement dialogue structures. After reviewing the technical issues, the entire team validated the scope of the dialogues, and the platform for the final prototype (Rasa).
- Tuning dialogue structures and training sets: The chatbot specialists synthesized and implemented the possible sequences of “intents” (i.e., statements from social workers, in Dutch) and “reactions” from the chatbot. The chatbot specialists asked the youth care practitioners to write examples of statements for each “intent” (i.e., their training sets). The chatbot specialists tested the detection of “intents”, and performed minor refinements of their training sets.

Along this iterative process, we gathered insights into the needs of youth care practitioners, and into the technical capabilities and limitations to address these needs. We also gathered insights into the design choices, and the difficulties to establish a design process for the dialogue structures (i.e., to decide the sets of “intents” and “reactions”, and their predefined sequences).

User needs

With our first two sessions of brainstorming and use cases analysis, we decided that our use case concerns the screening of teenagers for detecting potential abuse they may have experienced or witnessed. We decided to focus on simulating teenagers that had not suffered from sexual abuse. We identified the key content of a screening session, and were able to draft a high-level structure for the entire conversation (Figure 1).

The conversation is organized in 6 blocks, described below. The youth care professionals in our team also provided a script for an optimal discussion with a teenager, whom they call a “client”.

Block 1: Opening Statements

- Introduce the goal of the conversation, and start talking about one of the topics of Blocks 2-5.
- **Block 2: Check Abuse**
Check if the client has been a victim of sexual abuse.
- **Block 3: Explain Abuse**
Make sure the teen understands what sexual abuse is. Block 3-a: The social worker explains each type of sexual abuse. Block 3-b: The social worker asks the client (i.e., the chatbot) what they think sexual is.
- **Block 4: Explain Action**
Make sure the teen understands what to do in case of sexual abuse. Block 3-a: The social worker explains each type of action. Block 3-b: The social worker asks the client (i.e., the chatbot) what they think the course of action should be.
- **Block 5: Check Witness**
Check if the client has been a witness of sexual abuse. We did not implement this block, due to the short duration of our project.
- **Block 6: Closing Statements**
Wrap up the conversation, and introduce the next perspectives after this conversation.

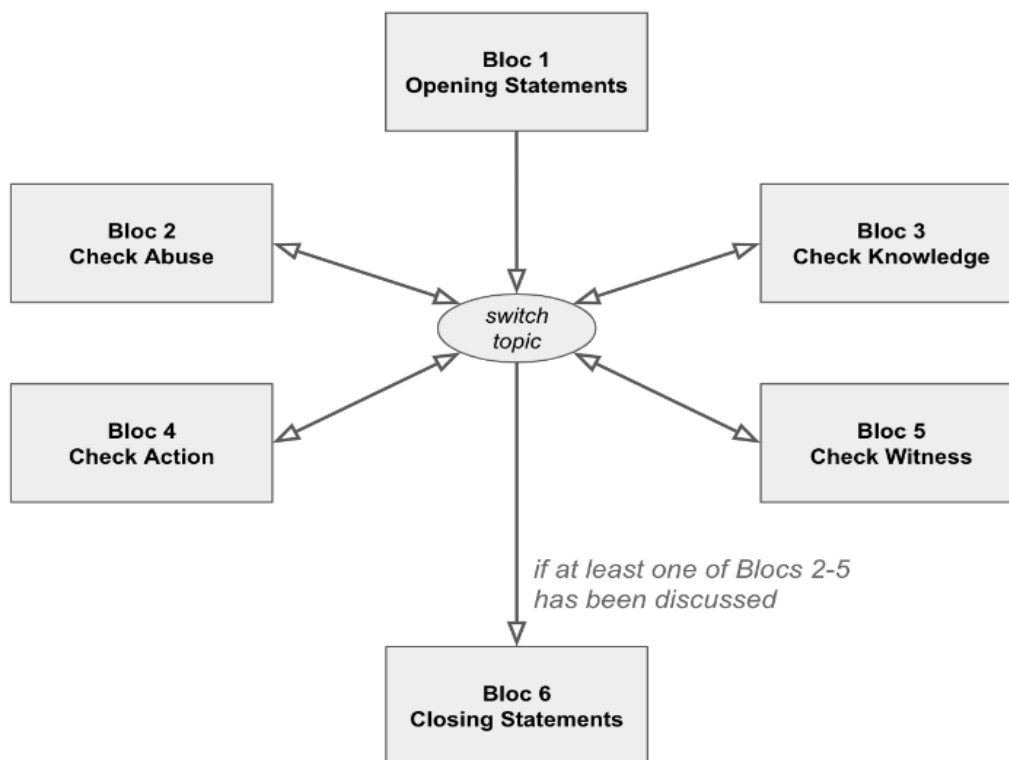


Figure 1. Global structure of the conversation. After introducing the topic of the session (Block 1) the youth care professional can choose the topic to discuss ('switch topic' to Blocks 2-5). After one topic has been discussed, the youth care professional can choose the next topic to discuss ('switch topic' again), or wrap up the conversation with closing statements (Block 6).

First prototype

To experiment with the suitability and feasibility of the global dialog structure (Figure 1), we implemented a simple chatbot with Flow.ai. To experiment with the most basic dialogue structure, we simplified our first prototype by working with predefined sentences. At each step of the dialogue, the users (i.e., the youth care professionals) are given a choice of sentences to tell the chatbot (i.e., the virtual teenager). For example, the first steps of the dialog are shown in Figure 2. Each predefined sentence corresponds to typical attitudes towards the virtual teenager, and that can trigger specific reactions, good or bad (e.g., making the teenager feel safe or anxious).

In essence, the predefined sentences of our initial prototype correspond to the different "intents" to implement. Each "intent" corresponds to an attitude that triggers an emotional reaction (positive or negative) from the virtual teenager, and a step in the dialogue structure (e.g., switch between the main topics of conversation, "blocks" in Figure 1, or explore further one of these topics along a predefined sequence of statements and answer).

We experimented with the possible emotional reactions of a virtual teenager, and defined typical statements (i.e., the predefined answers in Figure 2) that represent the emotional triggers we want the chatbot to detect and react to. We experimented with more detailed dialogue structures that contain a palette of reactions, while making the conversation progress within and between topics (i.e., "blocks" in Figure 1).

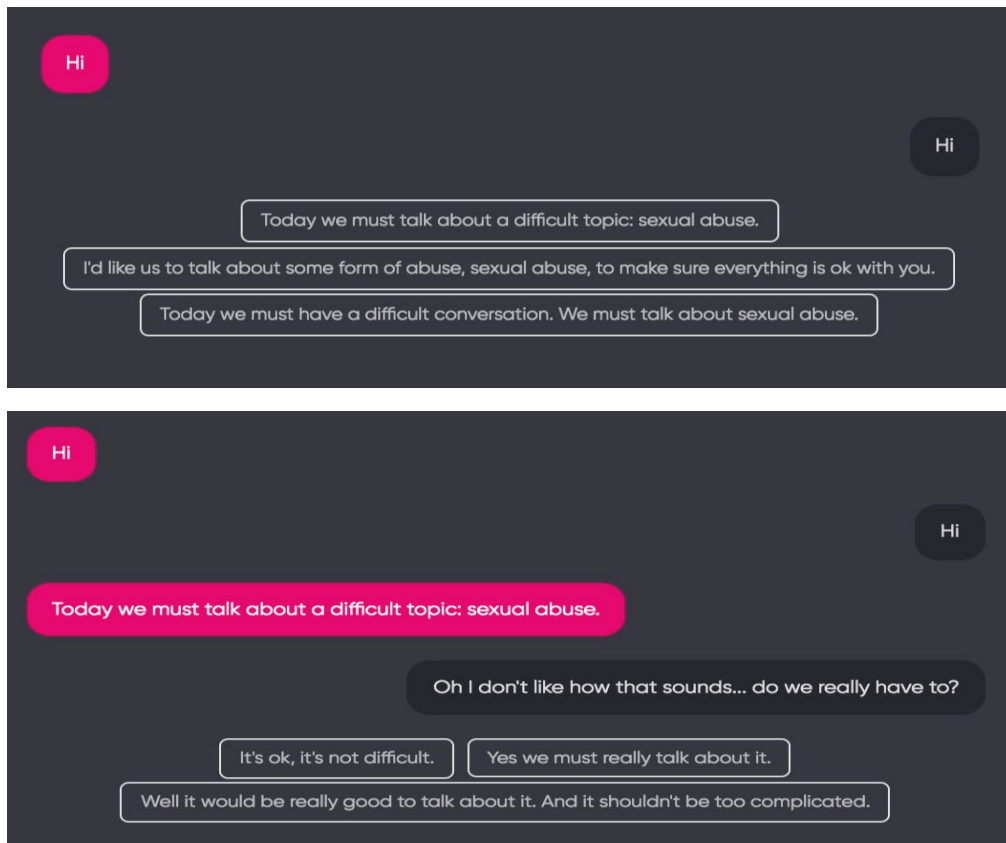


Figure 2. First steps of the dialog (Block 1 - Opening Statements).

Top: A choice of opening sentences is given to the youth care professional (bottom boxes with white contour).

Bottom: After selecting a predefined sentence (pink box on the left side), the chatbot responds with some degree of emotion (black box on the right side), and a choice of predefined answers is given to the youth care professional (bottom boxes with white contour).

From this prototyping phase with the Flow.ai tool, we gathered several insights about the feasibility and design process. Regarding feasibility issues, some are related to the functionalities of platforms such as Flow.ai. Others are related to the complexity and subtlety of the chatbot reactions to certain forms of language.

Issues with the functionalities of the chatbot platform:

While using predefined statements proposed to users, we encountered two issues: 1) The statements could not be more than circa 160 characters, making it difficult to write meaningful, subtle, or realistic statements. 2) The predefined statements could not be proposed in a series (e.g., users choose a first statement, to which the chatbot does not react, and are then proposed with a set of follow-up statements). We could not let social workers make a series of uninterrupted statements. The chatbot must make a reply first, before a new set of predefined statements are displayed to the user. It makes the conversations less realistic, as a natural conversation can contain several statements from the same person. Furthermore, we cannot have long statements (more than 160 characters) nor split them in several parts. Having natural conversations is not the main requirement of our initial prototypes, as using predefined statements is merely intended to make decisions on the detailed dialogue structure

(e.g., identify the “intents” to implement). However, this unnaturalness prevented the youth care professional to engage in the design process, and reflect on the dialogue structure.

Finally, a third technical issue concerns the user interface: 3) the graphical display allows to implement dialogues without writing any code, however, it requires significant time and effort (e.g., many clicks). It contradicted our assumption that such graphical interfaces would ease the implementation and enable youth care professionals to participate in the implementation, and experiment with potential dialogue structures.

Issues with the complexity and subtlety of dialogue structure: To implement emotional reactions of the virtual teenager, we need to multiply the number of “intents”. For instance, for an “intent” meant to make steps along the conversation, we need to implement several variants of the intent, each leading to a specific emotional reaction of the chatbot. The main technical issue with handling several emotionally-charged variants of the “intents” concerns the ability of the system to detect each variant properly: the more variants, the more chance to confuse one variant for another (e.g., if the training set is not large enough for each “intent”). This issue also has implications for our design process, introduced in the next section.

Design choices

Choice of technology and design process: We decided not to rely on graphical interfaces that allow implementing chatbots without writing code. We first used such an interface to design the dialogue in collaboration with youth care experts, without requiring them to manipulate computer code. This approach turned impractical: the graphical interface did not sufficiently remove technical complexity, and slowed the work of chatbot experts significantly. Furthermore, occasional bugs and mistakes arose, and fixing them required considerable time and effort.

We decided to use another chatbot platform (<https://rasa.com>) providing no graphical interface, but having an easy way of implementing the chatbot “intents” and “reactions”: using text files that remain easy to read by humans. However, these text files may remain too complex for youth care experts. Thus we decided to follow a design process where only chatbot experts manipulate the implementation files, and where youth care experts give feedback through online meetings and shared documents.

The remaining of our design process had 4 steps:

- The chatbot experts implemented the user “intents”, chatbot “reactions”, and their sequences (i.e., the dialogue structure, called “stories” in our chatbot platforms).
- The youth care experts provided feedback and training examples for each “intent” (i.e., statements and questions that chatbot users may say).
- The chatbot experts refined the “intents” according to the feedback and training examples. The chatbot “reactions” and the dialogue structures (“stories”) were also refined.
- The youth care professionals refined the chatbot “reactions” by providing typical statements that a teenager would say. For each “reaction”, we collected a set of equivalent statements that the chatbot could say to impersonate a teenager. Each time the chatbot would express a “reaction”, one of the possible statements will be chosen at random.
- The chatbot experts tested the chatbot prototype, and addressed incorrect detections of “intents” by refining their training examples.

Choice of dialogue structures: From the initial prototyping phase (e.g., using graphical interface and predefined statements), we chose a backbone scenario for the chatbot dialogue and identified recurrent patterns in the dialogue scenarios. The backbone scenario details the 6 blocks in Figure 1, and contains basic steps of an ideal conversation. In this scenario, the

youth care professional makes the right questions and statements for a complete screening of potential abuse, without triggering negative reactions.

From this backbone scenario, we identified typical variations that should trigger negative reactions from the chatbot. Three typical variations were mentioned repeatedly: the statements and questions can be too pushy, too anxiogenic, or too vague. We decided to implement the 3 variations when possible or relevant. We duplicated the “intents” of the backbone scenario, when relevant, and created up to 4 variants: the correct “intent”, the pushy “intent”, the anxiogenic “intent”, and the vague “intent”. To handle the chatbot reactions to incorrect “intent” (i.e., pushy, anxiogenic, or vague), we designed specific dialogue structures (i.e., series of “intent” & “reaction” called “stories”).

For vague “intents”, the chatbot’s “reaction” is either not to understand (e.g., “What do you mean?”,) or to refuse to discuss their romantic life (e.g., “*This is not your business*”). For pushy or anxiogenic “intents”, the chatbot would react in 2 phases:

- **First warning:** after a single pushy or anxiogenic “intents”, the chatbot expresses a strong negative reaction (e.g., “*Oh I don’t like how this sounds!*”, “*I really don’t wanna talk about this!*”).
- **Leaving:** after 2 consecutives pushy or anxiogenic “intents”, the chatbot leaves the conversation (e.g., “*Oh wow! This is crap, I’m leaving!*”, “*This is awful, this conversation is over*”). This reaction is also triggered if users persist with generic statements (e.g., “*We really need to talk about this*”, “*You have to tell me about it*”) as we implemented a specific “intent” to detect them.

After the “first warning”, if the user rephrases their statement into a correct “intent”, the chatbot will continue as in the backbone scenario. The chatbot can also detect encouraging or comforting “intents”, which trigger positive reactions, and stop the 2-step scenario of negative reactions. After a comforting statement, if the user makes another pushy or anxiogenic statement, the chatbot will again issue a “first warning” (but will not leave the conversation straight away).

A different dialogue pattern was implemented to handle particularly difficult questions to ask the virtual teenager. Before asking such questions, the user should first ask permission to discuss the topic (e.g., “I would like to ask you intimate questions, is it ok?”). If the user asks difficult questions directly, the virtual teenager will react negatively (with the same 2-step pattern: first warning, then leaving).

Finally, another dialogue pattern emerged after collecting additional training examples for each “intent”. We realised that many “intents” can be formulated either as a question (e.g., “Is it ok to talk about sexuality?”) or a simple statement (e.g., “I’d like to talk about sexuality”). This difference in phrasing requires the chatbot to react accordingly (e.g., “Yes it’s ok” or “Ah I see”). To do so, we would implement variants of the “intents” to trigger the right chatbot “reaction”. This would require to duplicate many “intents”, e.g., the 4 types (correct, pushy, anxiogenic, vague) would become 8 types (4x2 variants for question or statement).

To simplify the complexity of the dialogue, instead of duplicating the “intents”, we decided to write chatbot “reactions” that would fit either a question or a statement (e.g., “Ah it’s ok” would fit either a question or a statement). This design decision may be acceptable for the prototype of our project, but may not hold for more elaborate chatbots. We further simplified the numbers of “intent” and “reaction” by merging the pushy and anxiogenic “intents” as one, and implementing chatbot “reactions” that would fit both types of “intent”.

Final prototype

The final prototype contains 36 “intents” to detect in user statements (with a total of 289 training examples), 25 possible “reactions” of the chatbot (different “intents” can trigger the same “reaction”), and 33 low-level dialogue structures (series of “intent” & “reaction” called “stories”). The “stories” address blocks 1-4 and 6 in Figure 1, and are detailed in Appendix. The course code and pre-trained model are available on github.

The prototype cannot handle small talks, or very limited forms of it (4 “intents”). It also does not express very subtle forms of discontent (7 “reactions”) and the dialogue can quickly reach an impasse (stopping after 2 inappropriate “intents”). This may impact the usability and user experience, as the dialogue may not seem natural. However, quick and crisp negative reactions may also support the learning experience, as users would clearly see the negative impact of their mistakes. We kept these issues in mind when investigating the user experience in a user study.

USER STUDY

In order to test the pedagogical value of the chatbot, and to explore what possible limitations there are to a chatbot in the context of this particular problem, we tested the prototype chatbot with 4 participants. Two of the participants were professionals (child and youth social care) and two students (social work and pedagogy).

In order to assess the pedagogical value and the (technological) limitations of the chatbot, we first let the participants chat with the chatbot for 30 minutes, after which they immediately filled in a questionnaire with regard to their experience with the chatbot, what went good/wrong, the pedagogical value of the chatbot and some technical questions (for example, with regard to how realistic the chatbot felt). After filling in the questionnaire, a video call took place to deepen out the questions already asked in the questionnaire with a more qualitative approach. With this procedure, we mostly aimed to map out the pedagogical value of the chatbot prototype, by assessing the extent to which it could be used to learn new skills, to develop a sense of self-confidence to apply these newly learned skills, and the extent to which also existing skills, next to new skills, could be refreshed and be applied in the field on the long term.

With regard to the pedagogical value, the participants indicated that a chatbot could be an easy, flexible place to practice with new skills, and an addition to existing training as refresher of existing knowledge. During studies and training, mostly theory is learned, but with a clear and portable way to practice with learned skills, you can prepare yourself for applying these skills in the field. For example, it might be used to test multiple possibilities to go through a conversation, to test the ‘wrong’ ways in a safe environment, and to get in a certain ‘conversation’ mode, for example, just before the real conversation.

Furthermore, the students indicated that training with the chatbot provided an addition to training with other students by use of a role play, which is a common way of training conversational skills. The chatbot created an environment where the user could focus more on the content of the conversation and where different ‘roads’ could be tried out. The professional indicated that the step from small talk to having a conversation about sexual abuse is very difficult and gaining some experience in this way could help a lot.

With regard to limitations, the participants indicated that the small talk part was mostly lacking from the prototype, and that, because of this lack, the conversation flow was sometimes not

natural. An idea to tackle this problem is to include a 'small talk' dialogue that users should read first, after which they can start talking with the chatbot about sexual abuse. This way it is clear from which point the conversation starts. However, an argument to include small talk in the chatbot is to be able to train the switch from small talk to the subject of the conversation.

Participants also indicated that the chatbot mostly appeared as relatively curt and to-the-point, but sometimes gave quite heavy emotional reactions on relatively neutral input. The emotions of the chatbot were mostly perceived as negative, sometimes positive. Participants suggested that a possibility to program chatbots with different 'personalities' could benefit the pedagogical value, and that it would be like training with different 'cases'. Of course, different variables, such as positive or negative emotional valence, different cultural backgrounds, or different experiences with sexual abuse, could be manipulated to form such a 'case' chatbot.

In addition, with this format, non-verbal communication is lacking. The participants agreed upon the benefits of virtual reality or virtual characters to include non-verbal communication. However, they indicated that the benefits of a text-based chatbot could be that it is relatively easy and less expensive to develop, that it requires less equipment, and that it could be used in a flexible and quick way.

In conclusion, using a chatbot to practice new (conversational) skills and refresh old skills is seen by the participants as a beneficial addition to existing training. It could provide a quick and flexible method to refresh existing knowledge in a safe environment, with the possibility to try out different ways to hold a conversation about a sensitive subject such as sexual abuse, and with different 'cases'. However, it is important to keep in mind that the flow of the conversation must be natural and that non-verbal feedback is missing.

FUTURE WORK

Our small user study (N = 4) shows that using a chatbot might be a feasible way to train new skills and refresh existing skills and abilities in the field of youth care, especially on sensitive subjects such as sexual abuse. Chatbots could provide a safe, quick, and flexible method to practice conversational skills. However, due to the small scale of this study, studies with a larger and a more diverse group of participants might give more insight in the pedagogical value of chatbot, as well as other technologies.

It was shown that the current chatbot possessed certain technological limitations, such as an unnatural conversational flow, unexpected (heavy) emotional reactions, and lacking non-verbal communication. Therefore, it might be needed to further improve the dialogs, and the intents, reactions and stories that are used by the chatbot might be refined and more complexly structured. Also the further use of artificial intelligence (chatbot improves itself, as it were) could be an interesting choice. However, a large number of studies already covered the technical aspects of AI and this field is still growing. Future research related to the current study should keep its focus on the pedagogical value of chatbots and the application of chatbots in a (child and youth social care) professional setting.

Next to chatbots, other technologies could bring opportunities for learning and retaining conversational skills, such as Virtual Reality (VR) and other virtual agents, biofeedback, and the incorporation of serious game elements. Some technologies may enable higher-level reasoning, but more fundamental research is needed to apply them to our case.

COLOPHON

Authors roles:

Emma Beauxis-Aussalet (Vrije Universiteit Amsterdam) did the design and development of the chatbot, was involved in the user study and wrote most of the report. She was involved in the project while working at the Digital Society School of AUAS.

Koen Otte (AUAS) was involved in the user study and wrote part of the report.

Leonieke Boendermaker (AUAS) initiated the project, did the project management and provided guidance on the manuscript.

The authors thank Esmeralda de Haan (Qpido, gender specific child and youth social care), Jona Meijer (AUAS) and Mirjam Walpot (AUAS) for the development of the dialogues that were used in the chatbot and their contribution to the project.

APPENDIX

This section contains the dialogue structures (“stories”) for each step of the conversation (i.e., the blocks in Figure 1). We provide the exact code to implement them in Rasa, using yammel text files. The remaining implementation files (e.g., for “intents” and “reactions”) are available on github.

Opening the conversation (Block 1)

- story : greetings
steps
- intent: i_greetings
- action: utter_greetings

- story : how_are_you
steps:
- intent: i_how_are_you
- action: utter_feels_good

- story: ask_feelings
steps:
- intent: i_ask-feelings
- action: utter_feels_good

- story: ask_feelings_pushy_fail
steps:
- intent: i_ask_feelings_pushy
- action: utter_not_your_business
- intent: i_ask_feelings_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: intro_topic
steps:
- intent: i_intro_topic
- action: utter_nods

- story: intro_topic_pushy_fail
steps:
- intent: i_intro_topic_pushy
- action: utter_no_more_talk
- intent: i_intro_topic_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: intro_topic
steps:
- intent: i_intro_topic
- action: utter_nods

- story: intro_topic_pushy_fail
steps:
- intent: i_intro_topic_pushy
- action: utter_no_more_talk
- intent: i_intro_topic_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: intro_topic_vague
steps:
- intent: i_intro_topic_vague
- action: utter_dont_get_it

Screening for sexual abuse (Block 2)

- story: ask_permission
steps:
- intent: i_ask_permission
- action: utter_agreed

- story: ask_permission_pushy_fail
steps:
- intent: i_ask_permission_pushy
- action: utter_no_more_talk
- intent: i_ask_permission_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: ask_permission_vague
steps:
- intent: i_ask_permission_vague
- action: utter_that_depends
- intent: i_ask_permission_vague
- action: utter_dont_get_it

- story: ask_abuse
steps:
- intent: i_ask_abuse
- action: utter_no_abuse_happened

- story: ask_abuse_pushy_fail
steps:
- intent: i_ask_abuse_pushy
- action: utter_no_more_talk
- intent: i_ask_abuse_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: ask_abuse_vague
steps:
- intent: i_ask_abuse_vague
- action: utter_not_your_business
- intent: i_ask_abuse_vague
- action: utter_not_your_business
- action: utter_no_more_talk
- intent: i_ask_abuse_vague
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: relief_no_abuse
steps:
- intent: i_relief_no_abuse
- action: utter_thanks

- story: relief_no_abuse_inappropriate
steps:
- intent: i_relief_no_abuse_inappropriate
- action: utter_you_are_emotional

Checking the knowledge of abuse (Block 3)

- story: ask_example
steps:
- intent: i_ask_example
- action: utter_mentions_rape
- intent: i_ask_more_example
- action: utter_dont_know
- intent: i_ask_example
- action: utter_dont_know
- intent: i_ask_more_example
- action: utter_no_more_talk
- intent: i_ask_more_example
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: ask_more_example_pushy_fail
steps:
- intent: i_ask_more_example_pushy
- action: utter_dont_know
- action: utter_no_more_talk
- intent: i_ask_more_example_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: explain_abuse
- steps:
- intent: i_explain_abuse
- action: utter_nods
- intent: i_explain_abuse
- action: utter_i_know_this
- story: ask_if_happened
- steps:
- intent: i_ask_if_happened
- action: utter_no_abuse_happened

Checking the knowledge of actions to take (Block 4)

- story: ask_who_helps
- steps:
- intent: i_ask_who_helps
- action: utter_ask_adults_for_help
- intent: i_ask_more_example
- action: utter_dont_know
- intent: i_ask_more_example
- action: utter_no_more_talk
- intent: i_ask_more_example
- action: utter_talk_is_over
- action: utter_leaving_angry
- story: explain_help_draft
- steps:
- intent: i_explain_help_draft
- action: utter_ok_sure
- intent: i_explain_help_draft
- action: utter_no_more_talk
- intent: i_explain_help_draft
- action: utter_talk_is_over
- action: utter_leaving_angry

Dealing with negative reactions of the virtual teenager (Block 5)

- story: insist_failure
- steps:
- intent: i_insist_question_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: give_courage
steps:
- or:
- intent: i_deescalate
- intent: i_thanks_for_effort
- action: utter_good_to_hear
- action: utter_ok_lets_try

- story: empathise
steps:
- intent: i_deescalate_ask_thoughts
- action: utter_its_not_easy
- or:
- intent: i_deescalate
- intent: i_thanks_for_effort
- action: utter_ok_lets_try

- story: explain_boundaries
steps:
- intent: i_explain_boundaries
- action: utter_ok_lets_try

- story: explain_boundaries_pushy_fail
steps:
- intent: i_explain_boundaries_pushy
- action: utter_no_more_talk
- intent: i_explain_boundaries_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

Ending the conversation (Block 6)

- story: ask_abuse_again
steps:
- intent: i_ask_abuse_again
- action: utter_nothing_happened_confirmed
- intent: i_ask_abuse_again
- action: utter_no_more_talk
- intent: i_ask_abuse_again
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: ask_abuse_again_pushy_fail
steps:
- intent: i_ask_abuse_again_pushy
- action: utter_no_more_talk
- intent: i_ask_abuse_again_pushy
- action: utter_talk_is_over
- action: utter_leaving_angry

- story: explain_why_ask_again
steps:
 - intent: i_explain_why_ask_again
 - action: utter_nods
 - intent: i_explain_why_ask_again
 - action: utter_i_know_this
- story: ask_open
steps:
 - intent: i_ask_open
 - action: utter_nothing_to_add
- story: end_conversation
steps:
 - intent: i_end_conversation
 - action: utter_ok_sure
 - action: utter_goodbye
- story: end_conversation_pushy
steps:
 - intent: i_end_conversation_pushy
 - action: utter_leaving_angry
- story: goodbye
steps:
 - intent: i_goodbye
 - action: utter_goodbye