Author(s): Vapalahti, Kati; Marttunen, Miika; Laurinen, Leena

Title: Online and face-to-face role-play simulations in promoting social work students' argumentative problem-solving

Year: 2013

Version:

Please cite the original version:

Vapalahti, K., Marttunen, M., & Laurinen, L. (2013). Online and face-to-face role-play simulations in promoting social work students' argumentative problem-solving. Journal of Comparative Social Work, 8(1). https://doi.org/10.31265/jcsw.v8i1.92

Article:

Online and face-to-face role-play simulations in promoting social work students' argumentative problem solving

by

Kati Vapalahti[1], Miika Marttunen, Leena Laurinen

Department of Education, University of Jyväskylä
P.0. Box 35, FI-40014 University of Jyväskylä, Finland
kati.vapalahti@mamk.fi

[1] Corresponding author.

Abstract

This paper reports on a teaching experiment in which social work students (n=38) practiced problem solving through argumentative tasks. A teaching experiment was carried out at a Mikkeli University of Applied Sciences in Finland in connection with a course concerning preventative work against alcohol- and drug abuse. This quasi-experimental study investigated whether role-play simulation conducted either online (15 students) or face-to-face (14 students) improved students' problem solving on social issues. As a pre-test, the students wrote an essay after having watched a dramatization of problematic cases on elderly people's use of alcohol. The students also attended lectures (30 x 45 min) on the effect of substance abuse and preventive work, and after the role-play simulation they wrote another essay (post-test). Nine controls wrote an essay without participating in the role-play simulation. Lastly, the students filled out feedback questionnaires.

The students in the face-to-face group paid more attention to clients' close persons' viewpoints in their second- than in their first essays. In the online group, the students more often justified their behavioral solutions (what to do in the situation) with ethical principles in their second essays than in their first ones. The students in both groups found the role-play simulation to support their team work and communication skills. Role-play simulations as a part of long lasting development processes of argumentative problem solving seem to be beneficial for social work students' professional development.

Keywords: argumentation, ill-structured problem solving, online studies, quasi-experimental design, role-play simulation, social problems, social work education

1 Introduction

1.1 Argumentative problem solving in social work

Social workers often encounter unpredictable problems in their everyday work. Solving these problems often requires immediate decision making and actions that have to be justified. Social workers should support clients' self-understanding about their own needs and participation in the problem-solving process, in which

communication should be based on a cooperative informal negotiation instead of imposed solutions (Parton, 2000). In that process, an understanding of the client's viewpoint will be highlighted.

Everyday social problems faced by social workers are ill-structured in nature. In contrast to well-structured problems, ill-structured problems are complex, ill-defined and open-ended in nature (Chi & Glaser, 1985; Ge & Land, 2004), although the information and action demanded to solve ill-structured problems are unclear (Chi & Glaser, 1985) and the concepts, rules and principles covering them are indistinct in character (Jonassen, 1997). Ill-structured problems also have many solutions, as well as multiple paths to these solutions (Jonassen, 1997; Voss & Post, 1988). Thus, well- and ill-structured problems require different kinds of thinking (Jonassen, 1997). Jonassen (2000) has situated problem types in a continuum in which well-structured problems (e.g. logic-mathematic problems) lie on one side of the continuum and unstructured problems (e.g. ethical dilemmas) on the other side. In this study, social work students were given ill-structured problems to solve.

Argumentation is needed in the solving of ill-structured problems, and during an argumentative problem-solving process the causes of problems are analysed and adequate solutions to solve the problems are searched for (see van Bruggen & Kirschner, 2003; Cho & Jonassen, 2002; Jonassen, 2000). Argumentation is needed in representing the problem, constructing solutions for the problem and evaluating the problem-solving process. Problem-solvers have to operate with multiple representations, discuss their advantages and disadvantages, and justify their decisions (Ge & Land, 2004; Jonassen, 1997; Voss & Post, 1988). Argumentation and counter-argumentation help problem-solvers to create their own viewpoint on the problem by illuminating the views of others (Jonassen, 1997; Kuhn, 1991). Argumentation also helps problem-solvers both to refine their representation of the problem and to choose a good solution. The solutions in social work should be based on ethical principles of social work (see Talentia, 2005). These principles consist of such issues as clients' rights for life worth living, autonomy in one's decision making, and participation in society and one's own life.

The solving of ill-structured problems also requires both cognitive- and meta-cognitive resources (Ge & Land, 2004; Jonassen, 1997), with cognitive requirements including domain-specific knowledge, information on the case in question, concepts, rules and principles (Ge & Land, 2004; Jonassen, 1997). In turn, meta-cognitive skills involve both the consciousness of one's own thinking and applying previously acquired strategies. Moreover, the solving of ill-structured problems also requires the monitoring and evaluation of one's own cognition in order to search for and evaluate solutions (Ge & Land, 2004; Jonassen, 1997). Meta-cognitive skills may compensate for domain-specific and structural knowledge in cases where they are lacking or limited (Ge & Land, 2004). Problem-solving ability may be enhanced through practicing a meta-cognitive awareness of one's existing knowledge into new knowledge (Jonassen, 1997), and the importance of merging theoretical studies in higher education with the requirements of professional practices has been noted by many authors (e.g. Galea, 2001; McLaughlan & Kirkpatrick, 2004; Moss, 2000; Parton, 2000; Tynjälä, 2001).

Because argumentative problem solving is needed in social work it should be practised during professional education, and one possibility for practising it is to solve ill-structured problems that cover different professional situations (see Jonassen, 2000). Jonassen (2000) also integrated the practice of the solving of ill-structured problems into the curriculums of educational levels other than those of higher education. McLaughlan and Kirkpatrick (2004) suggest educational institutions to increase active, engaging learning methods (e.g. collaborative learning, problem-based learning, case methods, enquiry-based learning, role-plays and simulations) into their curriculums in order to support students' generalizable and transferable professional skills such as argumentative problem solving. In this paper, we describe a role-play simulation that was used to practice social work students' argumentative problem solving in a course on preventive drug abuse work at a Finnish University of Applied Sciences.

Social work can be studied in Finland both in the regular universities and in the universities of applied sciences, with the focus and profile of these educations differing from each other (Saksio, 2010). The social work education in the universities

focuses on social work cases based on legislation (e.g. involuntary treatments, income support and taking into care) and research, whereas at the universities of applied sciences the social work education focuses more on practical work with the clients and communities, guidance and counselling, case management and social support. However, the theoretical and ethical base is the same in both the educations and professions.

1.2 Role-play simulation as a learning method

Role-plays are created situations for students to assume a viewpoint or identity of a character that they would not normally assume (Barkley, Cross, & Major, 2005; Alexander & Boud, 2001). The purpose of role-plays is to engage the participants in actions in which they have to apply the core concepts of the learning theme in unfamiliar situations (Barkley et al., 2005). Barkley et al. suggest that the roles should be created to include interests, values and knowledge related to the problem case to be considered, and the students should do some preparatory work, such as reading articles on the topic or interviewing persons involved in the problematic case, in order to successfully engage and play out their roles out (see Naidu, 2003).

DeNeve and Heppner (1997) outline that role-plays are quite unstructured situations for role-actions, whereas role-simulations are more structured and long lasting in character. According to them, role-play simulations are focused on a specific field of study, and they have dimensions from both role-plays and role-simulations.

Recently, online role-play simulations have been delivered because of the many advantages of the Internet, including an effortless access to information, communication independent of place or time and the opportunity to use software for the tracking of student activities and learning during the role-play simulation (McLaughlan & Kirkpatrick, 2004). Online role-play simulations are described as beneficial multiple online interactions beyond various stakeholders' viewpoints, beliefs, actions and values about a problem without a "correct" outcome (Maier, 2007; McLaughlan & Kirkpatrick, 2004; Linser, 2004; Jones, 2007).

Online role-play simulations have been used in education in many disciplines. McLaughlan and Kirkpatrick (2004) used online role-play simulation in engineering

and geography to support university students' learning about discipline-specific knowledge, in addition to their generic skills about complex decision making, collaboration and understanding of societal impacts. Their research results revealed that during the role-play simulation the students learned about their roles (different values and beliefs, multiple perspectives), about the theme discussed and about the relationships between the participants. They also found that role-play simulation supported the transfer of students' learning to new contexts. Maier (2007) found that role-play simulation fostered engineering students' skills in working in multidisciplinary and international environments, helped them to see projects from multiple perspectives and supported their communication and teamwork skills. Jones (2007) also reported on the similar advantages of online role-plays in her five-year action research conducted in courses on Negotiation Skills, Employment Relations and Knowledge Management.

Naidu, Ip and Linser (2000) found that online role-play simulations supported political science students' communication and collaboration skills, as well as particularly supporting students' active and receptive approach to learning. Hull (2008) also found synchronous online (chat) role-play simulation to be an enthusiastic and activating environment for her second language students for sharing their opinions, thoughts and arguments. Similarly, in his studies on law education, Poustie (2001) showed that role-play simulations on environmental law decision making facilitated active and integrative learning.

Role-play simulations have traditionally been conducted face-to-face in a number of disciplines (McLaughlan & Kirkpatrick, 2004). For example, Feinman (1995) presented a general framework for conducting simulations in the education of lawyers, with the students in the simulations engaging in practical situations and attempting to solve the problems from the client's viewpoint. The results of DeNeve and Heppner (1997) in a university-level industrial psychology course showed that role-play simulations encouraged students to apply material from lectures to real-life situations as an active learning method. They recommended that role-play simulation should be used in conjunction with traditional lecture teaching when structured

lectures provide a learning framework for integrating acquired information to new practical situations.

Fletcher (2001) used a stakeholder decision-making simulation in his study on the teaching of coastal management. According to the students' feedback, the simulation improved students' understanding of stakeholders' roles and perspectives, their negotiation skills and their skills to contribute to the debate. In addition, students' learning was noted to be deeper and the learning process more enjoyable than during standard lectures. However, as a shortcoming of the simulation, Fletcher mentioned its complexity, as several students mentioned in their feedback that they did not completely understand the procedure during the simulation.

Davidson, Preez, Gibb and Nell (2009) used role-plays among geography students in order to develop their understanding of poverty-stricken African community, and found that students' understanding developed in a multidimensional direction. The role-play simulations were interactive in nature and encouraged students to participate in decision making, as well as critically assessing their peers' viewpoints. Plous (2000) presented a case study in which overtly presented prejudice situations were discussed through role-plays, with the results showing that the role-play provided the students with the possibility to engage in constructive discussions on difficult social problems with their peers. Similar types of role-plays have also been used as a learning method in teaching ethics in a multicultural engineering student group (Prince, 2006). Sloman and Thompson (2009) used drama on science teaching, and in their study marine biology students from three different class levels had the roles of the general public, scientists and research panelists. Sloman and Thompson also found that the students were felt to have benefitted from learning beyond the roles in developing their critical thinking and improving their communication skills by presenting their drama work to others.

Even if the research results on both the online and face-to-face learning environments presented above give a quite positive overview about the role-plays in education, many instructors hesitate to use role-plays or simulations in their teaching. The reasons for this may be a fear of the resources required for conducting them, as

well as the absence of extensive experimental research results (Krain & Lantis, 2006; Poling & Hupp, 2009). Furthermore, the online role-play simulations are quite challenging for the teacher to conduct and for the students to participate in (Poustie, 2001; Naidu, Ip, & Linser, 2000). In their pedagogical framework of role-play simulations in social science education, Asal and Blake (2006) emphasize the designers' responsibility to strictly identify the learning goals to be achieved. Additionally, the research results by both Krain and Lantis (2006) and Poling and Hupp (2009) indicated that role-play simulations did not provide any particular improvement in students' learning results on knowledge achievement, though they seemed to have played an important role in supporting students' multifaceted understanding (see also Vapalahti, Marttunen, & Laurinen, 2010), which is an important professional competence in social work (see Uggerhøj, 2007).

Even if role-play simulations have been widely used in different areas of education, their use in social work education has been less commonly reported. However, the learning outcomes achieved through role-play simulations in other disciplines are also important from the point of view of social work education (e.g. complex decision making, collaboration skills, multifaceted understanding and social awareness).

Moss (2000) reported on the use of large-group role-play techniques in social work education conducted in the Core Social Skills Module. The pedagogical aim of the module was to introduce students to the core themes of social work, and during experiential learning situations the students were provided with a kind of in-classroom setting similar to what they might encounter in real-life social work. The students were able to integrate theory and practice in a useful and realistic way in order to receive the most beneficial properties of the role-play. The students also felt that they had the possibility to incorporate values, law, core skills and knowledge into practical issues.

Uggerhøj (2007) studied forum theatre (see Boal, 1979) as a role-play method in social work, advocating that method because while using it the highest value of social worker-client involvement might be realized. He found that role-plays used among social workers and social work clients provided the clients with an experience of

being a worthy and an important informant concerning social problems, while for their part social workers obtained an opportunity to engage in discussion and problem solving with their clients.

In this study, social work students practiced argumentative problem solving through face-to-face and online role-play simulations. The research questions were: 1) Did the quality of students' argumentative problem solving improve when practiced online or face-to-face? 2) Did the students feel that they benefitted from the argumentative practicing methods?

2 Method

2.1 Participants

In the spring of 2009, 38 students (36 females, 2 males) from a degree programme in Social Work at a Finnish University of Applied Sciences practiced argumentative problem solving with a six-week teaching experiment. The experiment was organized as a part of a course on preventive work against alcohol and drug abuse, and two experimental groups, an asynchronous online group (n=15) and a face-to-face group (n=14), in addition to one control group (n=9), were formed.

2.2 Design of the study and data collection

The teaching experiment consisted of six phases, including both research activities (e.g. pre- and post-tests) and regular teaching activities of the course (lectures on preventive substance abuse). The quasi-experimental design is presented in Table 1:

Table 1 - Study design

Phase	Content of the activity	Group		
		Online (n=15)	Face-to-face (n=14)	Control (n=9)
1. Pre-test (45 min)	Watching problem case A (10 min)	X		
	Watching problem case B (10 min)		X	X
	Writing essays on problem case A (35 min)	X		
	Writing essays on problem case B (35 min)		X	X

2. Lectures and information (34 x 45 min)	Lectures on preventive substance abuse work (30 x 45 min) A lecture on argumentation in social work (3 x 45 min)	X	X	X
	Information concerning the research arrangements (45 min)	X	X	X
3. Test for small group formation	An assignment on argumentative problem solving	X	X	X
4. Practicing argumentative problem solving	Instructions for the online role-play simulation (10 min)	X		X
	Instructions for the face-to-face role-play simulation (10 min)		X	
	Online role-play simulation (4 days, 5 persons/group)	X		X[i]
	Face-to-face role-play simulation (45 min, 4–5 persons/group)		X	
	Peer assessment of solutions made by the other groups conducted online	X		X[i]
	Presenting role-plays to the entire group, peer assessment of solutions conducted face-to-face and class-wide discussions (45 min)		X	
5. Post-test (45 min)	Watching problem case A (10 min)		X	X
	Watching problem case B (10 min)	X		
	Writing essays on problem case A (35 min)		X	X
	Writing essays on problem case B (35 min)	X		
6. Feedback discussion and questionnaire (45 min)	Sharing opinions about the benefits of the role-play simulations and the experiment	X	X	X

Note: X=participation in the activity; [i)] the control group participated in delayed online role-play simulation after the post-test.

As a pre-test (Phase 1, Table 1), all the students wrote essays after having watched a dramatization (a DVD recording) on alcohol use by elderly people. The dramatizations described ill-structured problems simulated from real-life situations, and the problems were enacted without any solutions being provided to them. In writing their essays, the students were given question prompts that were formed by utilizing the problem-solving models of Jonassen (1997) and Ge and Land (2003).

The question prompts were as follows: *1) How would you define the problem you saw on the DVD? 2) Why do you think it is a problem? 3) How did the different persons see the problem? 4) What would you do as a social worker in the situation presented? 5) What would you say to the different characters? 6) Do you see any alternative solutions to the problem? 7) What kinds of solutions are they? 8) Compare different alternative solutions with your own solution, and assess the advantages and disadvantages of both solutions. Please, justify your answer, and state why you think your own solution is the best one.*

After having written the essays, all the students participated in 30 lectures (of 45 min each) on preventative alcohol and drug abuse work (Phase 2). After the lectures, the 29 students in the two experimental groups participated in role-play simulation conducted either face-to-face or online (Phase 4). The nine controls completed the post-test after the lectures without participating in the role-play simulation. For the role-play simulations, the students were assigned to groups according to a test on argumentative problem solving (Phase 3) in which they were asked to solve a given social problem on drug abuse and justify their decisions. By doing it this way, it was ensured that the argumentative problem-solving skills of the students in each group were as similar as possible. Otherwise, the groups did not differ from each other in any specific way.

During the role-play simulations the students in the experimental groups, which were divided into groups of either four or five members, engaged in a debate on a fictional young girl's use of alcohol. Three groups engaged in the role-play simulation online, and three groups face-to-face, while half of the members in each group were for the young girl's use of alcohol and half were against it. Furthermore, the students were given brief descriptions of their roles in the debates. The students discussed the problematic use of alcohol by adolescents through the roles of a young girl and the people (parents, classmates and teachers) surrounding her. Both the online and face-to-face role-play simulations were planned to increase students' multidimensional understanding of alcohol use by adolescents (see Vapalahti, Marttunen, & Laurinen, 2010).

After having practiced argumentative problem solving, the students did a post-test (Phase 5) that included an essay writing task similar to the pre-test. In the pre-test, the students in the online group watched problem case A, whereas the students in both the face-to-face and control groups watched case B. However, in the post-test, the order of watching the cases was reversed in order to avoid any test-wise effect (see Gall, Borg, & Gall, 1996, p. 519; Campbell & Stanley, 1966, pp. 50−52).

Lastly, in Phase 6, all the students anonymously completed a questionnaire on their opinions about the benefits of the methods used during the teaching experiment. The questionnaire included Likert-scale questions on role-play simulations, as well as both closed- and open-ended questions on student's readiness to participate in similar role-play simulations in the future.

2.3 Data analysis

2.3.1 Data

The data consist of 75 student essays and 31 questionnaires. The students in the online group wrote 30 essays, the face-to-face students 27 and the controls 18 (see Table 2).

Table 2 - Number of essays in the three conditions

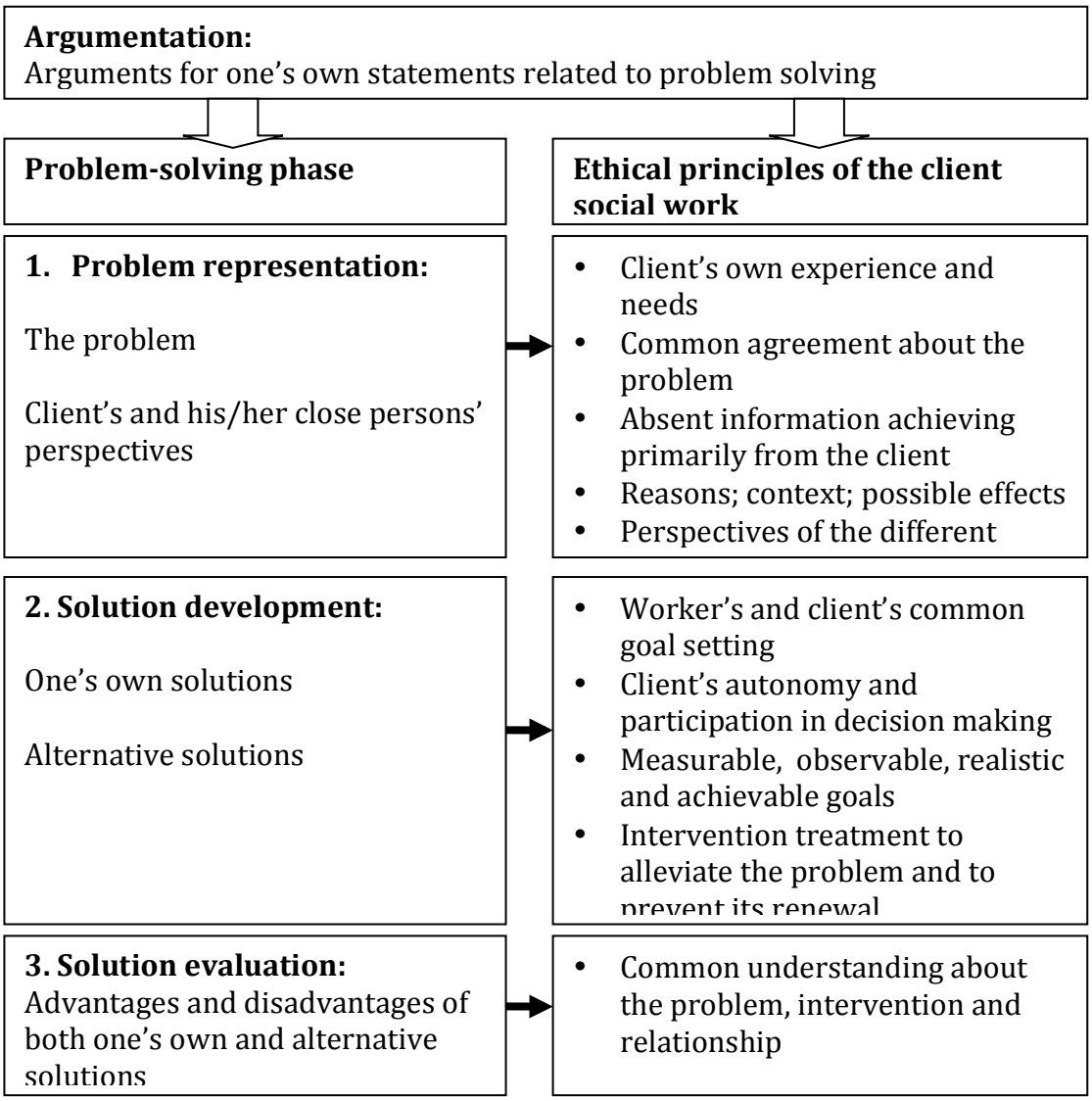
Test	Online group n=15	Face-to-face group n=14	Control group n=9	Total n=38
Pre-test	15	14	9	38
Post-test	15	13	9	37
Total	30	27	18	75

2.3.2 Qualitative analysis of the essays

The quality of the students' problem solving was analysed in their essays according to the analysis framework created by applying the definition of the problem-solving process used by Ge and Land (2004), which was supplemented with ethical principles included in problem solving in social work (see Heinonen & Spearman,

2001, pp. 149–168). The problem-solving process consists of three phases: 1) problem representation, 2) solution development, and 3) solution evaluation. Argumentative ability is needed in all these phases, as the definition criteria for the problems, the various solutions to the defined problems and the resolution power of the different solutions should be supported by adequate arguments. High-quality argumentation in social work takes the ethical principles of social work into account, which are considered in the following subfields of social work: 1) ethical principles in client work, 2) ethical work in society and multi-professional cooperation, 3) professional development, and 4) social worker's rights. In the argumentative analysis of the students' essays in this study, the ethical principles in client work were particularly in focus. The analysis framework, including both the phases of the problem-solving process and the ethical principles of client social work related to each phase, is illustrated in Figure 1:

Figure 1 - Analysis framework



The variables used in the analyses (see Table 3) were formed on the basis of the analysis framework. In the students essays the variables were identified, and the values were given according to Table 3. The qualitative analysis programme Atlas.ti was utilized in the qualitative analysis.

Table 3 -Variables used in the analysis of the students' essays

Problem-solving phase	**Variable**	**Value**
Problem representation	1. Level of problem definition	0 = poor (no problem representation) 1 = moderate (problem presented explicitly in the video case) 2 = good (problem conducted from the situation of the video case)
	2. Level of justification of problem definition	0 = poor (no or poor justification) 1 = moderate (arguments for one's own definition) 2 = good (justified with ethical principles)
	3. Level of seeing the client's perspective	0 = poor (not observed) 1 = moderate (somehow observed) 2 = good (well observed)
	4. Level of seeing the client's close persons' perspectives	
Solution development	5. Number of behavioural solutions	0−10
	6. Level of justification of one's own behavioural solution	0 = poor (no or poor justification) 1 = moderate (arguments for one's own solution) 2 = good (justified with ethical principles)
	7. Number of verbal solutions	0−13
	8. Level of justification of verbal solutions	0 = poor (no or poor justification) 1 = moderate (arguments for one's own solution) 2 = good (justified with ethical principles)
	9. Level of construction of alternative solutions	0 = poor (same as one's own solution) 1 = moderate (new solution) 2= good (new solution integrated to one's own solution)
Solution evaluation	10. Level of evaluation of one's own solution for the problem	0 = poor (no evaluation) 1= moderate (advantages of one's own solutions presented) 2 = good (both advantages and disadvantages of one's own solution presented)
	11. Level of evaluation of alternative solutions for the problem	0 = poor (no evaluation) 1= moderate (advantages of alternative solutions presented) 2 = good (both advantages and disadvantages of alternative solutions presented)

	12. Level of comparison between different solutions	0 = poor (no advantages or disadvantages mentioned) 1 = moderate (advantages and/or disadvantages for one's own and/or alternative solutions named) 2 = good (the superiority of one's own solution compared to the alternative solutions has been justified)

Examples of the analyses of different problem-solving phases are illustrated with the following text extracts, and the variables and their values are clarified in more detail.

Problem representation phase

The problems the students had defined in their essays were evaluated with four variables (Table 3). The following two text extracts illustrate a moderate- (Extract 1) and good level (Extract 2) of problem definition (Variable 1):

1) *Unelma's* [the client in the story on the DVD] *and other elderly people's use of alcohol.* [Moderate problem definition (Value 1) in which the problem is explicitly presented.] (Student 26)
2) *The problem of elderly people's drinking was not directly discussed. The issues were considered behind the back of the old woman* [the client] *and the decisions (such as forbidding children to visit her) were made without her knowing. She was only informed about the situation.* [Good problem definition (Value 2) indicating an understanding of the essence of the problem situation on the DVD.] (Student 27)

In the first text extract, the problem is explicitly defined as it was presented in the story on the DVD. The student has not used any of the clues given on the DVD to understand the essence of the problem. In the second extract, the problem is defined from a client's viewpoint. This definition represents the constructionist approach in social work, as the student has questioned the problem given explicitly on the DVD (elderly people's use of alcohol), which indicates that the student understands that the behaviour of the client's relatives was also problematic.

The students' way to justify their definition of the problem was also assessed. The most valuable justification (Variable 2, Value 2) in a social work context is a

justification with ethical principles, which is demonstrated with the following text extract:

3) *The problem is that Paavo's daughter, Raili, doesn't note how lonely her own father is, and that she has no time for Paavo.* [The problem.] *As a result of this problem, the old man starts to use immoderate amounts of alcohol for his loneliness.* [Justification with an ethical principle.] (Student 8)

Here, the student defines the problem by taking the client's perspective into account and in this way indicates that he/she understands the essence of the problematic situation. The student justifies his/her definition with the client's feeling of loneliness, which might be either a reason or a context in this case. The student also takes the effect of loneliness, which is one of most serious social problems in current Finnish society, into consideration (see Saari, 2010).

The students' abilities to observe the different stakeholders' (the client and his/her close persons) perspectives when defining the problem were measured with Variables 3 and 4 (Table 3). In the following extract a student has observed well both the client's (Variable 3, Value 2) and his close persons' perspectives (Variable 4, Value 2) in defining the problem:

4) *Paavo is waiting desperately for his daughter's (Raili) phone call to get some delight into his life. Raili is a busy woman. She doesn't really bother to listen to her father--- Raili's daughters do not have such a cold attitude, and they understand the seriousness of the situation and that their grandfather needs help.* (Student 1)

In defining the problem, the student first pays attention to the client's (Paavo) viewpoint, while next also taking the client's close persons' (Raili and her daughters) viewpoints into account. According to the idea of constructive social work, the client's viewpoint is the first that has to be considered (Parton & O'Byrne, 2000, pp. 82−89).

Solution development phase

The students' solutions to the problems they had defined were identified from the essays with five variables (Variables 5−9 in Table 3). The students' own solutions were recognized, i.e. what they themselves would have done (Variable 5) and said

(Variable 7) if they themselves had been social workers in the situation. Furthermore, the justifications for their own solutions (Variables 6 and 8) were evaluated. The following text extract illustrates both a moderate (Value1) justification for a behavioural solution and a poor (Value 0) justification for a verbal solution on the problem (elderly people's use of alcohol) that the student had determined beforehand:

> 5) *I would discuss* [a behavioural solution] *with Unelma about the disadvantages of the use of alcohol and how to prioritize between grandchildren and alcohol. I would guide her perhaps to try to find more sober company because Aino and Reino* [Unelma's friends in the day centre] *may not be the best company to Unelma, whose use of alcohol is becoming a real problem* [moderate justification]*. I would say to Unelma: "Do you think about your grandchildren's best interests? Do you want them to visit you? Do you want to keep up a good relationship with your daughter?* [a verbal solution with poor justification.] (Student 25)

The student thinks that a discussion of the situation is a solution for the problem. The justification for the problem is scored as moderate because the student does not consider what the client thinks or hopes in the situation. The student had defined the problem (elderly people's use of alcohol) beforehand without asking the client's viewpoint on the matter, which should usually be done in social work (see Jaatinen, 1995; Heinonen & Spearman, 2001, pp. 149–168). The student also attempts to find a verbal solution to the problem by presenting the client questions that can be answered only with either a "yes" or "no". Nevertheless, the problem-solving process in client work should be based on an open approach in which a social worker presents open questions to the client and provides the client with a lot of space to define the problem and search for a solution to it (see Jaatinen, 1995, 99−126). By contrast, in a closed approach a social worker defines the problem and its reasons, and searches for solutions to the problem beforehand by his/herself without listening to the client's opinions. The student has not justified his/her verbal solution at all; thus the solution is scored as poor.

In the sixth extract the student justifies discussion (see Variables 6 and 8, Table 3) with the need to get more information about the problem from the client [Paavo] in order to solve the problem together with him by respecting his autonomy (Value 2):

> 6) *As a social worker I would calmly discuss with Paavo and his relatives,* [a behavioural solution] [because] *I would try to find a solution together with Paavo* [an ethical principle]. *I would ask Paavo's viewpoint on his situation and I would guide him to realise himself what he should do* [verbal solution]. *Paavo has his autonomy* [an ethical principle] *and he should not be ignored when decisions concerning him are being made. Paavo is a legally competent person.* [an ethical principle.] (Student 1)

In this extract, the student would primarily search for information about the situation from the client. Heinonen and Spearman (2001, 153) state that in social work the client is usually the best informant when missing information should be added. The social worker will be expected to use her/his skills to support the client's know-how in the solving of her/his problems in an effective, ethical and reasoned way (Heinonen & Spearman, 2001, pp. 171–172; Parton & O'Byrne, p. 2000, 68). In addition to the discussion with the client, the student should also have a discussion with the client's relatives, so as to ensure that their viewpoints are heard as well.

In the analysis, attention was also paid to the students' construction of alternative solutions (Variable 9, Table 3), with the following text extract illustrating an alternative solution that the student has integrated into his/her own solution (Variable 9, Value 2):

> 7) *At the moment, I don't find any other alternative solutions to the problem, but to contact the old man's family and his close relatives and to support them to spend more time with the old man. Thus, he wouldn't feel himself to be so lonely anymore and he wouldn't start to drink. I would also connect my alternative solution into my own solution* [friendship service]. *The support of the family and close relatives would suddenly be important for the old man in solving the problem. The relatives' few visits might have become a significant reason for the old man's loneliness. In my opinion, by combining the issues*

mentioned above, the social network of the old man could be extended and his loneliness and drinking decreased. (Student 35)

Solution evaluation phase

The places in which the students assessed the advantages and disadvantages of both their own (Variable 10, Table 3) and alternative solutions (variable 11) were identified from the essays. Additionally, the students' way to compare their own solutions with alternative solutions was assessed (Variable 12). The following text extract demonstrates how a student compares different solutions and justifies the priority of his/her own solution (Variable 12, Value 2).

8) *The advantage of the alternative solution* [the grandfather would be left in the sheltered home] *is that then the old man would never be alone, but the disadvantage there is that he has to leave his home. Maybe the grandfather wouldn't like that. The best solution is to stay at home and that the grand children would visit him more often* [the student's own solution], *because that is the problem in this case. The reasons should be handled primarily, not the consequences.* (Student 75)

2.3.3 Statistical analysis of the students' essays and questionnaires

Pre- and post-tests within the two experimental and one control groups were compared with a non-parametric Mann-Whitney test. Parametric tests could not be used because the amount of data in the three groups was small and the values of the dependent variables were not normally distributed (see Bland, 1988, pp. 216–224, p. 238; Gall, Borg, & Gall, 1996, pp. 399−403).

The questionnaires were analysed both quantitatively (Likert scales) and qualitatively (content analysis of the open answers). A non-parametric Mann-Whitney test was used to compare the means between the online and face-to-face groups.

The coding system has been developed during a long period and over many rounds of coding by one researcher. An inter-rater reliability test was made for 15% (11 essays) of the data for the variables except for Variables 5 and 7, which differ from the other variables in their nature. The agreement percentage was 68.

3 Results

3.1 Students' argumentative problem solving

3.1.1 Representations of the problem

The students in the face-to-face group noticed the clients' close persons' perspectives better in their post-tests than in their pre-tests (Means 1.4 vs. 1.9, Table 4). All in all, the students in all groups noted well the client's close persons' perspectives, both in the pre- and post-tests. The values in all the groups were a Value 1 (somehow observed) or a Value 2 (well observed, see Table 3, Variable 4).

Table 4 - Comparisons (Mann-Whitney test) of the pre- and post-test results (Means) relating to the problem representation phase between the different groups

Variable (range 0−2)	GROUP											
	Online				Face-to-face				Control			
	Pr (M)	Po (M)	*U*	*p*	Pr (M)	Po (M)	*U*	*p*	Pr (M)	Po (M)	*U*	*p*
Level of problem definition	1.8	1.6	90.0	ns.	1.5	1.7	73.5	ns.	1.6	1.1	22.5	*
Level of justification of problem	0.7	0.8	98.5	ns.	0.9	1.0	87.0	ns.	0.7	0.3	30.0	ns.
Level of seeing client's perspective	1.5	1.4	103.0	ns.	1.5	1.6	87.0	ns.	1.4	1.4	38.5	ns.
Level of seeing the clients' close persons' perspective	1.9	1.7	97.5	ns.	1.4	1.9	39.5	***	1.8	2.0	31.5	ns.

Note: Pr = Pre-test; Po = Post-test; ns. = non-significant; *=p<.06; ** = *p<.05;* *** = *p<.01*

There were no significant differences between the pre- and post-tests in the students' level to define problems in the online and face-to-face groups, while in the control group the students' level to define the problems decreased (M = 1.6 vs. 1.1) significantly.

3.1.2 Students' solutions for the problem

In the solution development phase, the students in the online group justified their behavioural solutions better in their post- than in their pre-tests (Means 1.2 vs. 1.6). In their post-tests, the students used more ethical principles in justifying their

solutions than in their pre-tests. Table 5 shows the level of justification and the construction of alternative solutions in the students' essays.

Table 5 - Comparisons (Mann-Whitney test) of the pre-test and post-test results (Means) relating to the solution development phase between the different groups

Variable (range 0−2)	GROUP											
	Online				Face-to-face				Control			
	Pr	Po	*U*	*p*	Pr	Po	*U*	*p*	Pr	Po	*U*	*p*
Level of justification on one's own behavioural solution	1.2	1.6	72.0	*	1.4	1.8	58.5	*ns.*	1.6	1.1	24.5	*ns.*
Level of justification on one's own verbal solution	1.0	1.3	85.0	*ns.*	0.8	0.9	83.0	*ns.*	1.4	1.0	26.5	*ns.*
Level of construction of alternative solutions	0.7	0.7	110.0	*ns.*	0.7	0.9	73.5	*ns.*	1.0	0.9	36.5	*ns.*

Note: *Pr = Pre-test; Po = Post-test; ns. = non-significant;* * = p<.06

In the analysis, the numbers of the students' behavioural and verbal solutions were counted, and there were no significant differences in these numbers in the students' essays in any group. The students in all groups presented behavioural solutions less often in their post- than in their pre-tests (online group 2.3 vs. 1.8; face-to-face group 3.1 vs. 1.9; control group 3.0. vs. 2.8). The corresponding means concerning the verbal solutions in the students' essays were as follow: online group 4.3 vs. 4.5; face-to-face group 3.5 vs. 2.7; and control group 3.9 vs. 5.6.

3.1.3 Students' evaluations of solutions for the problem

The students evaluated both their own and alternative solutions quite similarly in the pre- and post- tests in all groups, and no statistically significant differences were found between the pre- and post-test results (Table 6).

Table 6 - Comparisons (Mann-Whitney test) of the pre and post-test results (Means) relating to the solution evaluation phase between the different groups

Variable (range 0 – 2)	GROUP											
	Online				Face-to-face				Control			
	Pr	Po	*U*	*p*	Pr	Po	*U*	*p*	Pr	Po	*U*	*p*
Level of evaluation of one's own solution for	1.4	1.0	76.5	*ns.*	0.7	0.6	84.5	*ns.*	0.9	1.0	36.0	*ns.*

the problem												
Level of evaluation of alternative solutions for the problem	1.2	0.8	84.0	*ns.*	0.9	0.8	82.0	*ns.*	0.9	1.2	31.0	*ns.*
Level of comparison of different solutions	0.9	0.7	98.5	*ns.*	0.6	0.9	64.0	*ns.*	0.9	1.0	36.5	*ns.*

Note: Pr = Pre-test; Po = Post-test; ns. = non-significant

In their essays, the students compared different solutions with each other quite rarely (range in both the pre- and post-test from 0 to 2). In 26 out of 75 essays, the students did not mention any advantages or disadvantages at all. In 37 essays, the advantages or the disadvantages of solutions were named without justifying them, and in only 12 essays did the students justify the priority of their own solution over the other. Kuhn (1991) emphasizes that a critical evaluation of alternative viewpoints is an essential issue in the development of critical thinking and in understanding the reasons behind social problems.

3.2 Students' opinions about the role-play simulations

The students in both groups assessed the utility of the role-play simulations in terms of their learning as quite good, with the mean values from 2.5 to 3.8 (see Table 7). Furthermore, the students in both groups assessed the role-plays as most beneficial for developing their teamwork and communication skills (M = 3.4 and 3.8). All the students felt the role-play simulation to be least beneficial for the development of their knowledge achieving- and evaluation skills, and the students' opinions did not differ significantly between the face-to-face and online groups. Table 7 shows how the students assessed their learning during the role-play simulations in the course.

Table 7 - The mean values of the students' opinions about their learning during the role-play simulations

Questionnaire item (Range from 1=disagree to 5=agree)	Online-group[i)] (n=20)		Face-to-face group (n=11)		Test statistics (Mann-Whitney test)	
	M	*Sd*	*M*	*Sd*	*U*	*p*
1. The role-play simulation helped me to understand	2.9	.811	3.1	.601	80.5	ns.

different viewpoints concerning intoxicant issues and intoxicant work.						
2. The role-play simulation deepened my understanding on adolescents' use of intoxicants.	2.7	.894	2.9	.928	82.5	ns.
3. The cases in the role-play simulation and in the writing assignments promoted my knowledge and skills needed in working life.	3.2	.768	3.1	.601	83.0	ns.
4. The role-play simulation developed my problem-solving skills.	2.9	.889	3.4	.882	61.5	ns.
5. The role-play simulation developed my critical thinking.	3.0	.873	3.1	.601	97.0	ns.
6. The role-play simulation developed my knowledge achieving- and evaluation skills.	2.5	.740	2.9	.601	71.5	ns.
7. The role-play simulation developed my team work and communication skills.	3.4	.848	3.8	.441	66.5	ns.

Note: [i)] *The students of the control group who participated in the online role-play simulation and evaluation discussion after their post-test were included; ns. = non-significant*

Many students described in their open answers that the role-play simulations helped them to understand different viewpoints concerning intoxicant issues (Item 1, Table 7). The following text extracts illustrate these opinions:

> *Nice way to learn. It gives an opportunity to consider one's own opinion and you "have to" take other people into consideration*. (Student 24)
>
> *The role-play was a different way of teaching and it was very useful. You had to think about things from different perspectives than just your own.* (Student 26)
>
> *A meaningful way to learn. It was possible to see different viewpoints and get practice in argumentation.* (Student 27)

Table 8 shows how the students assessed their work during the role-play simulations. In the face-to-face group, the students thought that the role-play simulation enabled them to apply theoretical knowledge to practical situations more often than the students in the online group ($M_{face\text{-}to\text{-}face}$=3.6 vs. M_{online}=2.9, U=51.5, $p<.05$, Statement 3 in Table 8). The students in both groups felt most strongly that they were able to utilize their previous knowledge about adolescents' use of intoxicants (Means 3.6 and 3.7, Statement 1 in Table 8).

Statements concerning the role-play simulations (score from 1=disagree to 5=agree)	Online-group (n=20)		Face-to-face group (n=11)		Test statistics (Mann-Whitney)	
	M	Sd	M	Sd	U	*p*
1. I was able to utilize my previous knowledge about adolescents' use of intoxicants.	3.6	.739	3.7	1,000	91.0	ns.
2. I am able to apply the issues I learned in the role-play simulation in other contexts.	2.8	1.097	3.1	.928	83.5	ns.
3. I was able to apply theoretical knowledge to practical situations.	2.9	.768	3.6	.726	51.5	*
4. The role-play simulation enabled creative thinking.	3.1	1.046	3.8	.833	62.5	ns.
5. The students were committed to cooperating during the role-play simulation.	3.5	.964	3.6	.726	95.5	ns.

Table 8 - The mean values of the students' opinions about working in the role-play simulation
Note: *=p<.05

Most of the students (25 out of 31) said that they would still be ready to participate in role-play simulations as a part of their studies. However, some students found the given roles to be too strict. For example, one student mentioned that the roles were too strictly determined. Nonetheless, the student was still ready to participate in role-play simulations as a part of the studies:

> *Maybe, if the opinions of the roles would not have been so strictly determined. --- On the other hand, the role-play was a nice change and to me, as a quiet person, it was easier to "talk" beyond the role. Nice!* (Student 9)

Even if the students felt quite strongly that the role-play simulation enabled creative thinking (Statement 4, Table 9), three students said that they would not like to participate in the role-play simulations anymore. They felt that participation in this kind of activity requires creativity and courage, as the following text extract illustrates:

> *I don't feel myself comfortable in interactive situations. It demands creativity and at least some courage.* (Student 6)

Two of the three aforementioned students did not specifically like to participate in online role-play:

> *No, if they are only online.* (Student 8)

> *I don't use a computer daily if I am not forced to. I felt the need for a daily participation in role-play compulsory because I don't use computers often. Performing the given task was delayed because I forgot it.* (Student 11)

The students were asked how they felt about the problem-solving writing tasks after having watched the problematic cases. They mentioned that even if the task was interesting, it also was challenging and that the time limit was too strict. The following text extracts illustrate these issues:

> *I was challenged to consider the cases that I maybe otherwise would not have even thought to exist.* (Student 4)

> *A little bit challenging (I mean the writing) because I would have had ideas to write, but there was too little time to get essential issues down!* (Student 14)

Some students thought that it would have been more beneficial to try to solve the problems by discussing in small groups than by writing individually, and the next extract portrays that opinion. The students also highlighted this issue in the feedback discussions of the course:

> *The watching of the DVD was ok. But instead of writing I would have wanted to solve this problem, for example, through small group conversations. I also think that an intention in social work practice is to try to solve problems through collaborative team discussions. The quick analysis of the situation (that is, writing on paper) "locked me up" a little bit, and after this I felt a bit uncertain* (Student 31)

Even if many students thought that the writing tasks were quite challenging, one student described it as easy:

> *It was easy to write and also to watch. It was nice; at least I did not have any problems in this part of the course.* (Student 11)

4 Discussion

4.1 General discussion about the results

The purpose of this study was to develop teaching methods for improving social work students' argumentation when solving ill-structured social problems, and the results of the study showed that the students improved in their argumentative problem solving. When defining the problem in the face-to-face group, the students took the client's close persons' perspectives into account better in their post- than in their pre-tests. Additionally, in the online group the students justified their behavioural solutions in their post-tests in a more sophisticated way than in their pre-tests.

The teaching of argumentative problem solving, however, is a challenging task, as the students only improved in two out of the 12 variables used in measuring their progress. Thus, teaching methods for improving students' ill-structured problem solving should be developed further. For example, argumentative skills should be practiced more throughout professional studies, particularly when practicing to solve social problems. In the solving of social problems, the focus is on the ethical principles of social work, which are sometimes complicated to recognize and apply in practical situations. Hence, practicing the use of arguments based on the ethical principles of social work when justifying solutions to problems encountered in social work is important.

Argumentative problem solving in social work is a complicated professional skill. In this study, the students practiced problem solving in a teaching experiment, including the use of simulated real-life cases in which they had to use their knowledge on both the ethical principles of social work and the alcohol issues. The experiment was carried out during a fairly short time period, so in order to achieve more noticeable learning results students clearly need more time than they were provided in this study to engage in problem-solving exercises and to reflect on their experiences.

In the problem representation phase, the students seemed to benefit most from the role-play simulation conducted face-to-face. In the face-to-face group, the students paid more attention to the perspectives of the main character's (client's) close persons in their post-tests than in their pre-tests. One reason for this result could be

that in the face-to-face group, the peer assessment discussion was more interactive than in the online environment. Therefore, different viewpoints had possibly been considered more strongly in the face-to-face group (see also Hakemulder, 2007).

Conversely, in the solution development phase, the students in the online group seemed to benefit from the role-play simulation. The online role-play simulation seemed to advance students' skill to help justify their solutions with ethical principles (e.g. client's participation, right of self-determination) which, according to Parton (2000), should be used as the primary arguments in the problem solving in social work. This kind of high-level justification also requires plenty of time to consider the arguments. Asynchronous online environments seem to provide students with more time and larger possibilities to reread written arguments than is possible in face-to-face environments (see Vapalahti, Marttunen, & Laurinen, 2010).

Evaluation of the solutions for the problems seems to be quite difficult for the students. The students in all groups primarily just listed either the advantages or disadvantages for the solutions and whether they were their own- or alternative solutions, but did not evaluate the solutions from both sides in their essays. The teaching experiment did not seem to promote the students' evaluation skills, as the pre-test and post-test results did not differ significantly. Possible reasons for that could be that the problem-solving task was quite challenging for the students, and that the time limitation in this study was strict. The students simply might have had too little time to evaluate the solutions more deeply.

The students' evaluations on both their learning and working in the role-play simulations showed that they found the role-play simulations to have benefitted their teamwork- and communication skills, and similar results were also found by Naidu, Ip and Linser (2000). Argumentation is needed in teamwork and cooperation in both multi-professional work and in the client work of social work. Consequently, it seems to be useful to use role-play simulations in social work education to provide students with practical environments for learning the skills needed in their future work.

The students thought that the lectures on alcohol and drug abuse work were very beneficial in the current study, with the lectures providing students with the substantive knowledge needed during problem solving. In this way, the lectures worked as a base for the practicing of argumentation. DeNeve and Heppner (1997) recommended that role-play simulations should be integrated into lecture teaching for applying learning contents to real-life situations, and the results of this study also support this recommendation.

4.2 The challenges of the study

It has been suggested that integrated learning environments are more effective than solely using online learning environments (Dillenbourg, Järvelä, & Fisher, 2009). In this study, the use of the online environment fostered the students' ability to justify their own solutions, which is an important result as more and more counseling in social work will be done online. Thus, problem solving and justification skills have to also be practiced online during professional studies of social work.

The progress of the development of the students' problem solving was not very extensive, which is probably due to the online and face-to-face learning environments being independent from each other. The integration of the learning environments could be strengthened by continuing the written online problem-solving process face-to-face after having first attempted to solve the problem through written argumentation in an online environment. Through these kinds of blended learning arrangements, learners may benefit from both written online and spoken face-to-face interaction (see Garrison & Vaughan, 2008, 5). It has been previously found that practicing argumentative problem-solving in a blended learning environment deepened students' argumentation and supported their multidimensional understanding of discussed issues (Vapalahti, Marttunen, & Laurinen, 2010).

The students' essay writing after they had watched the DVDs was supported with question prompts in both the pre- and post-tests. Some students mentioned in the feedback discussions that they probably would have benefited more from examples of experts' solutions to the problems. Question prompts have been shown to be more effective in the beginning than at the end of the practicing process when the aim is to develop students' problem-solving skills (Ge & Land, 2004). According to Ge and

Land (2004), experts' examples about the problem solving are more effective at the end of the practicing process. Hence, the question prompts should work as support for the practicing of solving social problems at the beginning of the learning process, as well as with collaborative discussions with experts at the end of the process.

The students' answers in their feedback questionnaires revealed that some students felt that they did not get enough information about the aims of the study at the beginning of the teaching experiment. That may have caused frustration for some students, thereby particularly diminishing their motivation to write the post-test essays, which turned out to be shorter than the pre-test essays. Along with possible motivation problems, another reason for the shorter post-tests may be the students' test fatigue. The pre-test was arranged immediately after Christmas holidays, whereas the post-test was written at the end of the study period in the last study day before spring holidays. For this reason, it is quite probable that the students were more tired when completing their post-tests than their pre-tests.

Tiredness may describe the problem-solving situation of social work in a realistic way. In the worst case, overstrain and being too busy may affect social work professionals' problem-solving processes, and in that way also decrease the quality of the decisions they make in their work. Also for that reason, argumentative problem solving should be practiced during professional studies, as the internalization of argumentative thinking concerning problematic social issues presumably has an effect on high-quality problem solving in challenging social work situations.

References

- Alexander, S., & Boud, D. (2001). Learners still learn from experience when online. In J. Stephenson (Ed.), *Teaching and Learning Online. Pedagogies for new Technologies (pp. 3—15). USA: Routledge.*
- Asal, V., & Blake, E. L. (2006). Creating Simulations for Political Science Education. *Journal of Political Science Education*, *2*(1), 1–18.

- Barkley, E. F., Cross, K. P., & Major, H. C. (2005). *Collaborative Learning Techniques. A Handbook for College Faculty.* San Francisco: Jossey-Bass.
- Boal, A. (1979). Theater of the oppressed. London: Pluto Press.
- Bland, M. (1988). *An introduction to medical statistics*. Oxford: Oxford University press.
- Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research.* Reprinted from *Handbook of Research on Teaching* (1963). Chicago: Rand McNally College Publishing Company.
- Chi, M. T. H., & Glaser, R. (1985). Problem-solving ability. In R. J. Sternberg (Ed.), *Human abilities. An information processing approach* (pp. 227–250). New York: W. H. Freeman and Company.
- Cho, K-L., & Jonassen, D. H. (2002). The Effects of Argumentation Scaffolds on Argumentation and Problem Solving. *Educational Technology Research and Development, 50*(3), 5–22.
- Davidson, J. H., Preez, L. D., Gibb, M. W., & Nel, E. L. (2009). It's in the Bag! Using Simulation as a Participatory Learning Method to Understand Poverty. *Journal of Geography in Higher Education*, *33*(2), 149—168.
- DeNeve, K. M., & Heppner, M. J. (1997). Role Play Simulations: The Assessment of an Active Learning Technique and Comparisons with Traditional Lectures. *Innovative Higher Education, 21*(3), 231—246.
- Dillenbourg, P., Järvelä, S., & Fisher, F. (2009). The evolution of research on computer-supported collaborative learning: From design to orchestration. In N. Balacheff, S. Ludvigsen, T. de Jong, T. A. Lazonder, & S. Barnes (Eds.), *Technology enhanced learning: Principles and products* (pp. 3–19). Netherlands: Springer.
- Dillenbourg, P., & Tchounikine, P. (2007). Flexibility in macro-scripts for computer-supported collaborative learning. *Journal of Computer Assisted Learning, 23*(1), 1–11.
- Feinman, J. M. (1995). Simulations: An Introduction. Journal of Legal Education, 45, 469—479.
- Fletcher, S. (2001). Using Stakeholder Decision-making Simulation to Teach Integrated Coastal Management. *Journal of Geography in Higher Education,*

25(3), 367–378.

- Galea, C. (2001). Experiential Simulations: Using Web-Enhanced Role-Plays to Teach Applied Business Management. *Information, Technology and Management, 2*(4), 1573-7667.
- Gall, M. D., Borg, W. R., & Gall. J. P., (1996). *Educational research. An introduction*. 6th edition. New York: Longman.
- Garrison, D. R., & Vaughan, N. D. (2008). Blended learning in higher education. Framework, principles, and guidelines. San Francisco: Jossey-Bass.
- Ge, X., & Land, S. M. (2003). Scaffolding students' problem-solving processes in an ill-structured using question prompts and peer interactions. *Educational Technology Research and Development, 51*(1), 21–38.
- Ge, X., & Land, S. M. (2004). A conceptual framework for scaffolding ill-structured problem-solving processes using question prompts and peer interaction. *Educational Technology research and Development, 52*(2), 5–22.
- Hakemulder, F. (2007). *Forum Theater effects on beliefs about business.* ILO Enter-Growth Programme. www.entergrowth.com/download.php?type=projects&id=38
- Heinonen, T., & Spearman, L. (2001). *Social work practice. Problem solving and beyond.* Toronto/Vancouver: Irwin.
- Hull, B. E. (2008). Internet chat in simulations: Taking Bullying online. *Simulation & Gaming, 39*(2), 198–208.
- Jaatinen, J. (1995). Alkoholiongelman avoimuus ja sulkeutuneisuus. In A. Jokinen, K. Juhila, & T. Pösö (Eds.), *Sosiaalityö, asakkuus ja sosiaaliset ongelmat* (pp. 99–126). Helsinki, Finland: Sosiaaliturvan keskusliitto.
- Jonassen, D. H. (1997). Instructional Design Models for Well-Structured and Ill-Structured Problem-Solving Learning Outcomes. *Educational Technology Research and Development, 45*(1), 1043–1629.
- Jonassen, D. H. (2000). Toward a design theory of problem solving. *Educational Technology Research & Development*, 48(4), 63−85.
- Jones, S. (2007). Adding value to online role-plays: Virtual situated learning environments. In ICT: Providing choices for learners and learning. Proceedings Ascilite Singapore 2007.

http://www.ascilite.org.au/conferences/singapore07/procs/jones-s.pdf.

- Jokinen, A, Juhila, K, & Pösö, T. (1995). Tulkitseva sosiaalityö. In A. Jokinen, K. Juhila, & T. Pösö (Eds.), *Sosiaalityö, asiakkuus ja sosiaaliset ongelmat* (pp. 103–110). Helsinki, Finland: Sosiaaliturvan keskusliitto.
- Juhila, K. (2004). Sosiaalityön vuorovaikutuksen tutkimus. Historiaa ja nykysuuntauksia. *Janus 12*(2), 155–183.
- Krain, M., & Lantis, J. S. (2006). Building knowledge? Evaluating the effectiveness of the global problems summit simulation. *International Studies Perspectives,* 7, 395–407.
- Kuhn, D. (1991). The Skills of Argument. Cambridge: Cambridge University Press.
- Linser, R. (2004). Suppose you were someone else… The learning environment of a web-based role-play simulation. *Conference Proceedings. Society for Information Technology & Teacher Education 15th International Conference*, Atlanta, Georgia, 1−6.
- Maier, H. R. (2007). Meeting the challenges of engineering education via online role-play simulations. *Australasian Journal of Engineering Education,13*(1), 31–39.
- McLaughlan, R. & Kirkpatrick, D. (2004). Online role-play: Design for active learning. *European Journal of Engineering Education, 29*(4), 477–490.
- Moss, B. (2000). The use of large-group role-play techniques in social work education. *Social Work Education, 19*(5), 471 – 483.
- Naidu, S. (2003). Designing instruction for e-learning environments. In M. G. Moore, & W. G. Anderson (Eds.), *Handbook of distance education* (pp. 349–365). Mahwah, New Jersey: Lawrence Erlbaum.
- Naidu, S., Ip, A, & Linser, R. (2000). Dynamic goal-based role-play simulation on the Web: A case study. *Educational Technology and Society 3*(3), 190−202.
- Paron, N. (2000). Some thoughts on the relationship between theory and practice in and for social work. *British Journal of Social Work, 30,* 449−463.
- Parton, N., & O'Byrne, P. (2000). *Constructive social work. Towards a new practice.* New York: Palgrave.
- Plous, S. (2000). Responding to overt displays of prejudice: A role-playing exercise. *Teaching of Psychology 27*(3), 198−200.

- Poling, D. A., & Hupp, J. M. (2009). Active learning through role playing. Virtual babies in a child development course. *Collage Teaching,* 57(4), 221−229.
- Poustie, M. R. (2001). Engaging students and enhancing skills: Lessons from the development of a web-supported international environmental law conference simulation. *International Review of Law Computers & Technology,15*(3), 331–344.
- Prince, R. H. (2006). Teaching Engineering Ethics using Role-Playing in a Culturally Diverse Student Group. *Science and Engineering Ethics, 12*(2), 321-326.
- Saari, J. (2009). *Yksinäisten yhteiskunta.* Helsinki: WSOY.
- Saksio, M. (2010). Social Work Education in Finland. Presentation in Georg Simon-Ohm University of Applied Sciences on 21st November 2010.
- Sloman, K. & Thompson, R. (2009). An example of large-group drama and cross-year peer assessment for teaching science in higher education. *International Journal of Science Education,*1−17.
- Talentia ry. Professional ethical board. (2005). Ethical guidelines for social work professionals. Helsinki. http://www.talentia.fi/files/1649_Etiikkaopas2005.pdf.
- Tynjälä, P. (2001). Writing, learning and the development of expertise in higher education. In G. Rijlaarsdarn (series Ed.), & P. Tynjälä, L. Mason, & K. Lonka (volume Eds.), *Studies in Writing, Volume 7, Writing as a Learning Tool: Integrating Theory and Practice.* (pp. 37–56). Dordrecht, Netherland: Kluwer Academic Publishers.
- van Bruggen, J. M., & Kirschner, P. A. (2003). Designing external representations to support solving wicked problems. In J. Andriessen, M. Baker, & D. Suthers (Eds.), *Arguing to learn. Confronting cognitions in computer supported collaborative learning environments* (pp. 177–203). Dordrecht, Netherland: Kluwer Academic Publishers.
- Uggerhøj, L. (2007). Creativity, fantasy, role-play and theatre in social work: A voice from the past or step for the future? *Social Work & Social Science Review, 13*(3), 48−62.
- Vapalahti, K., Marttunen, M., & Laurinen, L. (2010). From online role-play to written argumentation: Using blended learning in lessons on social issues. In J. Yamamoto (Ed.), *Technology in teacher education, reflective models.* (pp.

164–183). IGI Global.

- Voss, J., & Post, T. (1988). On the solving of ill-structured problems. In M. T. H. Chi, R. Glaser, & M. J. Farr (Eds.), *The Nature of Expertise* (pp. 261–285). Hillsdale: Lawrence Erlbaum Associates Publishers.