Pr	efac	e	III
w	hat	was the Question?	. 1
		Rye Ejersbo	
1.		Introduction	. 1
2.		Background	
3.		Benefits of the course	.3
4.		What happens in the classroom?	
5.		Reflection and analysis	
6.		In-service training	
7.		Conclusion and further questions	. 9
8.		Acknowledgements	
9.		References	
Aı	naly:	zing math student teachers' sensitivity for aspects of the complexity of em oriented mathematics instruction	11
		n Fritzlar	11
10 1.		Introduction	11
1. 2.		The Faltproblem (folding paper problem)	11
z. 3.		Generalizing considerations	12
з. 4.		A study of student teachers' degree of sensitivity for complexity	14
. 5.		References	18
0.			10
Oı	deri	ing Quadrangles and Analogizing Quadrangles and Triangles to	
Po	olyhe	edrons	21
А	Prob	elem Field with Different Aspects	
		r Graumann	
1.		Figures in the plane – triangles and quadrangles	21
2.		Analogies in space to the plane figures of the "sub-house of parallelograms"	23
3.		Analogies in space to symmetrical quadrangles	
4.		Analogies in space to plane figures of the house of triangles	27
5.		Final remark	27
6.		References	28
Fr	om	plane curves to space surfaces: First results from a problem solving	• •
		ach in a computer based environment	29
		Klaoudatos	
1.		Introduction	
2.		The project	30
3.		Visualization, visual thinking and semiotic mediation	31
4.		First results of the research	
		What is the representation of the equation x+y=12 in space?	
	4.2	In which way can we construct a surface from the contours?	35
	4.3	Was the representation of x+y=12 necessary?	36
5.		The computer as semiotic mediator: The work of the undergraduate student Discussion and future work	
6.		References	
٥.			

Content



	lopment of Problem Solving at Comprehensive Schools	41
1	Introduction	41
	Problem solving	
1.1	Problem solving model	41
	Problem solving strategy	
	Problem solving strategy.	
	Mathematical behavior	
2.	Aims of the research	43
	Can we plan a problem solving course which improves pupils' problem solv skills?	43
2.2	Can we develop the problem solving skill by teaching focused on technique	es
	that help especially to understand the problem and the solution?	43
2.3	Can we change pupils' attitudes towards difficult problems by teaching so	that
	they experience problems as meaningful challenges, not as distressing tas	
3.	Some ideas and principles of the course	
4.	Research plan	44
5.	Research problems	45
6.	A solving map	, 45
7.	What kind of problems would be good?	48
8.	References	
Pái M State	-of-the-Art in Problem Solving: Focus on Open Problems	
	Pehkonen	
1.	State-of-the-art in problem solving	
	Problem solving in the 1980s	
1.2	Open Problem Solving in the 1990s	
2.	The main concepts in open problems	59
2.1	Open problems	59
2.2	Investigations	61
3.	References	62
Beyo	ond PISA - Analyzing and evaluating thought processes with the suppo	rt of 67
	nut Rehlich	
1.	Introduction	67
2.	Effects of resonance and dissonance	68
3.	Some elements for modeling differences in cognitive structures	
4.	Simulation of "investigative processes of communication"	
5.	Concluding remarks	77
6.	References	
Pogi	ster	
i tegi	3161	78

п