

# Contents

<b>1</b>	<b>STEM Education in the World</b>	<b>1</b>
1.1	Introduction	1
1.2	Characteristics of Successful Education Systems	2
1.2.1	The Teaching Profession	3
1.2.2	Diversity	4
1.3	Summary	5
	References	5
<b>2</b>	<b>Strategic Analysis</b>	<b>7</b>
2.1	A Strategic Analysis Model	7
2.2	SWOT Analysis	8
2.3	Delphi Method	9
2.4	Risk Management	10
2.5	Summary	14
	References	15
<b>3</b>	<b>STEM Education in Israel: A Case Study</b>	<b>17</b>
3.1	STEM Education in Israel: Past and Present	17
3.2	Research Framework	19
3.2.1	Research Methodology	19
3.2.2	Research Participants	20
3.2.3	Research Tools	21
3.2.4	Research Process	22
3.3	Summary	23
	References	24
<b>4</b>	<b>Phase A: Risk Identification—Identification of Risk Categories by SWOT Analysis of STEM Education in Israel</b>	<b>25</b>
4.1	Conflicts and Barriers	25
4.1.1	The Bureaucratic-Professional Conflict	25
4.1.2	Barriers in Change Processes	27

4.2	Seven Risk Categories . . . . .	28
4.2.1	Risk Category: Sectors in STEM Education . . . . .	29
4.2.2	Risk Category: Teachers—Opportunities, Training, and Social Status . . . . .	36
4.2.3	Risk Category: Curriculum of STEM Subjects . . . . .	38
4.2.4	Risk Category: Study Sequences—School, Higher Education, Military, Labor Market . . . . .	40
4.2.5	Risk Category: Management of STEM Education . . . . .	42
4.2.6	Risk Category: Social Perceptions . . . . .	44
4.2.7	Risk Category: National Programs in STEM Education . . . . .	46
4.3	Summary . . . . .	47
	References . . . . .	47
<b>5</b>	<b>Phase B: Risk Rating . . . . .</b>	<b>49</b>
5.1	The “Risk Management—Risk Rating” Questionnaire . . . . .	49
5.1.1	The “Risk Management—Risk Rating” Questionnaire Formulation . . . . .	50
5.1.2	The “Risk Management—Risk Rating” Questionnaire Distribution . . . . .	51
5.1.3	The “Risk Management—Risk Rating” Questionnaire Analysis . . . . .	51
5.2	Finding: Risks Rating—Identification of Significant Risks for STEM Education in Israel . . . . .	56
5.2.1	The Scores of the 43 Risk Factors . . . . .	57
5.2.2	Grouping the Risk Factors by Three Levels of Severity: High, Medium, and Low . . . . .	58
5.2.3	Risk Categories Rating by Their Severity Impact on STEM Education in Israel . . . . .	61
5.3	Summary . . . . .	62
	References . . . . .	62
<b>6</b>	<b>Phase C: Risk Response . . . . .</b>	<b>63</b>
6.1	Introduction to the Response Phase: Operational Risks, Strategic Risks, and External Risks . . . . .	63
6.2	Response Plan . . . . .	66
6.3	Four Strategic Risks and 13 Courses of Action . . . . .	72
6.3.1	Strategic Risk 1: The Social Status of the Teaching Profession in Israel . . . . .	75
6.3.2	Strategic Risk 2: Public Image of Technology Education . . . . .	79
6.3.3	Strategic Risk 3: Negative Perceptions Regarding Science Subjects . . . . .	81
6.3.4	Strategic Risk 4: Sectoral Gaps . . . . .	83

- 6.4 Cross-Sector Collaboration in Risk Management of STEM Education . . . . . 85
- 6.5 Summary . . . . . 87
- References . . . . . 87
- 7 What Can STEM Education Systems in the World Learn from the Israeli Case? . . . . . 89**
  - 7.1 Meta-Practices of Risk Management . . . . . 89
  - 7.2 Summary . . . . . 91
  - Reference . . . . . 91

Risk Management of Education Systems

The Case of STEM Education in Israel

Even-Zahav, A.; Hazzan, O.

2017, XVII, 91 p. 6 illus., Softcover

ISBN: 978-3-319-51983-8