Index

academic majors, generally
defining liberal education 3–5, 7, 13,
expected proficiencies approach to
83–4, 108, 174
increasing importance of 8–9
on proficiency-based courses 116, 124
in liberal education, role of 4–6, 8,
Study-in-Depth Project 116, 119
76–8, 107–8
associationism 68
neglect of 107–8
Bach, G.L. 217
restrictions on 131–2
Bartlett, R.L. 64
specialization of, influences on 12–13
Batten School of Leadership and see also economics major
academic minors, restrictions on 131–2
accountability, of education/faculty
critical thinking; moral
89–90, 120–21
reasoning
active learning 97
American Economic Association
in economics major 114–24
Committee on Economic
proficiency-based courses 108–13
Education xix, 19, 97, 105, 107,
Adkins, R. 116
173, 222
Adler, Mortimer 99–100
American Economic Association
Advanced Placement examination in
Committee on Economic
economics xix, 19, 97, 105, 107,
Bach, G.L. 217
173, 222
Bartlett, R.L. 64
analytical skills
American Economic Association
acquired in economics major 66–8,
Committee on Economic
107, 197–8
programs 139–42
acquired in interdisciplinary
assessment 34, 114–18, 197–8, 334
programs 139–42
see also critical thinking; moral
Association of Advance Collegiate
reasoning
Schools of Business (AACSB)
Assocation of Advance Collegiate
statement on assurance of learning
Schools of Business (AACSB)
standards 119–20
statement on assurance of learning
Association of American Colleges and
standards 119–20
Universities (AAC&U)
criticism of academic major 19
breadth vs depth
Bok, Derek
goals of liberal education 202–8
Borg, J.R. 64
and academic major, role of 4–5,
Bowman and Gordon Gray
7, 13–14, 108, 124
Professorships 105
and economics major 15, 17, 134,
Bransford, J. 33, 84–6
216
brasfield, D. 191
breadth vs depth
Brennan, T. 188

163–4
Index

as goal of liberal education 83, 129–30, 202–6
improving
methods for 85, 131, 164
need for 10, 27, 131, 221
research posts as training in 101–2
‘concept inventories’ 86–7
creative performance, of economists 68–71
critical thinking
in economics major 48–50, 63–4, 166
critique courses 51–2
and market analysis 48–51, 57–8
and moral reasoning 53–7
success in achieving goal of 202–4
as goal of liberal education 48, 61–2, 185, 202–6
and intellectual development 61–2
and interdisciplinary programs 139–42
neglect of 5, 185
curriculum reform, reasons for
avoiding 109, 120–21
‘deep learners’ 33–4
degrees, pre-professional, proposals for
26–7, 45–6, 66–7, 152–3, 223
Denison University 182–3
departments, educational/subject see faculty
distributional critiques, in economic major 51
diversity, living with, as goal of liberal education 15, 202–6
educational welfare approach 54–6
economics, generally
cross-disciplinary nature of 69–70, 77, 135
defining 77
econometrics 141–2, 147
Economic Education in the Schools xix–xx
economic efficiency, theory of 54–6
economic history 23
need for inclusion in major 44–5,
148, 179, 185, 222
economic literature 11, 197–8, 204
see also textbooks
economic welfare approach 54–6
economics, generally
cross-disciplinary nature of 69–70, 77, 135
defining 77
and economy, importance of 45–6
and human behavior, as means of
analysis 68, 77–8, 111
whether to teach at secondary level
xix–xx
economics major
analytical skills acquired in 66–8,
107, 197–8
assessment 34, 114–18, 197–8
big think questions, whether covered
by 43–4, 72–4, 102–3, 164–5,
168–9, 171–2, 186–8
breadth vs depth in 129–32, 216–17
and business
big think questions, relevance to
79, 152–3, 158, 204–8, 221
as ersatz business major 26–7, 46,
207–9
links with 15, 18–19, 66–7, 152–3
course difficulty, students’ views on
195–7
and creative performance 68–9
and critical thinking 48–52, 61–2
critique courses 51–2
and moral reasoning 53–7
success in achieving goal of 202–4
criticism of 43–4, 65–9
cumulative nature of 77–8
dual tracks in 18–19, 25–7, 179–80
and economic history, coverage in
44–5, 148, 179, 185, 222
economic models, role of 33
economics science vs economics
policy major, proposals for
25–7, 46, 66
and the economy, need to think
about more 45–7
focus of 15, 43–4
need for change in 44–7, 103–5
and globalization 157–60, 202–6
goals of 14–16, 32–3, 83–4, 188,
215
in graduate education, relevance to
undergraduate education 6–8,
29–30, 71–4, 100–101
‘Great Books’ approach 11
historical development of 66–8
intellectual isolationism of 72–3
and interdisciplinary programs
129–32, 136–7
and liberal education 72–3, 84
relevance to 62–4, 99–100, 103–5,
166–7
role in providing 20, 76–9
macroeconomics courses 29–30
market analysis, role of 48–51
mathematics, role in 45–6, 67, 73–4,
197–8, 204–5, 207
microeconomics courses 29–30
and moral reasoning 17, 53–8, 103,
202–4
narrowness of 43–4
pre-professional major, proposals for
26–7, 45–6, 66–7, 152–3, 223
and public policy, relevance of 15,
18–19, 26–7, 53–4, 56–7, 79,
168, 179–80
statistics, role in 16, 19, 29–30, 46,
141–2, 158, 167, 197–8, 204–5
structure/content of 29–30
integration of skills/content across
courses 33–4
introductory courses 95–8, 101–2
principles course 29–30, 32–4, 66,
95–6, 104–5, 168–9
reform proposals 31–4
‘social issues’ approach to 95–7
textbooks 31–3, 54–5, 95–7,
137–8, 217–19
student demographic trends in 70–71
student satisfaction with 66, 191–4,
205–9
and students’ future careers
faculty or non-economics based,
which taught for 69–71, 79,
152–3, 170–72, 185, 194–5,
200–202, 207–8
plans for 17–18, 31, 66–7, 152–4,
200–202, 207–8, 222–3
students’ reasons for choice 199–202
teaching approaches
alternative approaches to 95–7
‘chalk and talk’ approach 97,
112–13
expected proficiencies approaches
to 114–24
‘Great Books’ approach 11
‘social issues’ approach to 95–7
track system 24, 179–80
and technological change 145, 158–60
<table>
<thead>
<tr>
<th>Term/Phrase</th>
<th>Page References</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘thinking like an economist’</td>
<td>15–20, 57–8, 84–5, 87, 197–8</td>
</tr>
<tr>
<td>changing emphasis of 16–17</td>
<td></td>
</tr>
<tr>
<td>and expected proficiencies approach 109–24</td>
<td></td>
</tr>
<tr>
<td>and intellectual isolationism 72–3</td>
<td></td>
</tr>
<tr>
<td>whether appropriate goal 19, 166–7</td>
<td></td>
</tr>
<tr>
<td>universality of 66–7</td>
<td></td>
</tr>
<tr>
<td><strong>Education’s End</strong></td>
<td>6</td>
</tr>
<tr>
<td>efficiency, economic, theory of 54–6</td>
<td></td>
</tr>
<tr>
<td>ethics <strong>see</strong> moral reasoning</td>
<td></td>
</tr>
<tr>
<td>Eubanks, C. 191</td>
<td></td>
</tr>
<tr>
<td><strong>European Journal of the History of Economic Thought</strong></td>
<td>155</td>
</tr>
<tr>
<td>evaluation</td>
<td></td>
</tr>
<tr>
<td>Advanced Placement examination in economics 224</td>
<td></td>
</tr>
<tr>
<td>of faculty/professors</td>
<td></td>
</tr>
<tr>
<td>and tenure/promotion decisions 35 through published research 21, 29, 103–4</td>
<td></td>
</tr>
<tr>
<td>of teaching</td>
<td></td>
</tr>
<tr>
<td>costs 96</td>
<td></td>
</tr>
<tr>
<td>incentives for 94</td>
<td></td>
</tr>
<tr>
<td>methods of 92–3</td>
<td></td>
</tr>
<tr>
<td>expected proficiency-based approach 108–13</td>
<td></td>
</tr>
<tr>
<td>adoption/implementation procedures 120–23</td>
<td></td>
</tr>
<tr>
<td>assessment of student skills 114–18 barriers to 120–21, 124</td>
<td></td>
</tr>
<tr>
<td>criticism of 115</td>
<td></td>
</tr>
<tr>
<td>degree programs based on 118–20 in economics major 114–24</td>
<td></td>
</tr>
<tr>
<td>goals of 118–19, 121, 123–4</td>
<td></td>
</tr>
<tr>
<td>experiential knowledge 217–19</td>
<td></td>
</tr>
<tr>
<td>externalities, and critical thinking 48–50</td>
<td></td>
</tr>
<tr>
<td><strong>faculty/departments</strong></td>
<td></td>
</tr>
<tr>
<td>accountability 89–90, 120–21</td>
<td></td>
</tr>
<tr>
<td>curriculum reform, reasons for avoiding 109, 120–21</td>
<td></td>
</tr>
<tr>
<td>and expected proficiency-based courses/degrees 120–23</td>
<td></td>
</tr>
<tr>
<td>incentives for teaching evaluation 94 and liberal education</td>
<td></td>
</tr>
<tr>
<td>and economics course content 154–5</td>
<td></td>
</tr>
<tr>
<td>influence on xxiv–xxv, 7–9, 11–12, 100–101</td>
<td></td>
</tr>
<tr>
<td>responsibilities for 147–9</td>
<td></td>
</tr>
<tr>
<td>whether faculty goals contrary to 170–72</td>
<td></td>
</tr>
<tr>
<td>whether taught for research/teaching future 150–51, 185</td>
<td></td>
</tr>
<tr>
<td>need for change in 20–23, 103–5</td>
<td></td>
</tr>
<tr>
<td>from bottom up 20–21, 37–8, 171–2</td>
<td></td>
</tr>
<tr>
<td>importance of support from 143–4</td>
<td></td>
</tr>
<tr>
<td>recruitment, for teaching 147–9, 177, 220</td>
<td></td>
</tr>
<tr>
<td>success measured by research publication 23–4, 29, 103–4</td>
<td></td>
</tr>
<tr>
<td>tenure/promotion decisions and evaluation 35, 94</td>
<td></td>
</tr>
<tr>
<td>influence on liberal education 12, 100–101</td>
<td></td>
</tr>
<tr>
<td>non-tenure track lecturers/professors 24, 179–80</td>
<td></td>
</tr>
<tr>
<td>Feiner, S.F. 64</td>
<td></td>
</tr>
<tr>
<td>Fleischacker, Samuel 61</td>
<td></td>
</tr>
<tr>
<td>Foley, Duncan 15</td>
<td></td>
</tr>
<tr>
<td>freshman seminars 8, 10, 78–9, 101–2</td>
<td></td>
</tr>
<tr>
<td>gender, trends in economics students 135, 204–6</td>
<td></td>
</tr>
<tr>
<td>general education courses <strong>see</strong></td>
<td></td>
</tr>
<tr>
<td>interdisciplinary programs; liberal education; pre-professional degrees</td>
<td></td>
</tr>
<tr>
<td><strong>The General Theory</strong></td>
<td>51, 68</td>
</tr>
<tr>
<td>globalization, and the economics major 157–60, 202–6</td>
<td></td>
</tr>
<tr>
<td>graduate education</td>
<td></td>
</tr>
<tr>
<td>admissions focus of 7</td>
<td></td>
</tr>
<tr>
<td>alternative doctoral programs 178–9</td>
<td></td>
</tr>
<tr>
<td>graduate training 9–10, 16–17, 21–5, 104–5</td>
<td></td>
</tr>
<tr>
<td>and liberal education, compatibility with 7–8, 100</td>
<td></td>
</tr>
<tr>
<td>research focus of 6–7, 10, 152, 165–8, 170–72, 174, 183–4</td>
<td></td>
</tr>
<tr>
<td>teacher training 21–5, 184–5</td>
<td></td>
</tr>
<tr>
<td>and undergraduate education</td>
<td></td>
</tr>
<tr>
<td>differing needs of 6–8, 29–30, 71–4, 100–101, 174</td>
<td></td>
</tr>
<tr>
<td>relevance of courses to 6–8, 29–30, 71–4, 100–101</td>
<td></td>
</tr>
</tbody>
</table>
Educating economists: the Teagle discussion

Grant, R.R. 117
‘Great Books’ approach 11, 31–2
Greater Expectations 83
Grinnell College 182–6

Hansen, W. Lee 16, 19, 27, 33, 110, 115–16
Harvard University 22, 28–9
Hayek, Friedrich 61
History of Political Economy 155
How People Learn: Brain, Mind, Experience and School 84–8
humanities 11, 174, 219
balance of breadth/depth in 19–20
and economics, difficulty compared with 195–7
incentives
for interdisciplinary programs 130–31
for teaching
improving practices 36–7, 89–90, 94, 220
journal article rankings 23–5, 29, 36, 154–5, 172, 179
lack of 174, 182–3, 220
vs research 7, 9, 21–3, 27–9, 133, 152, 174, 182–4, 220–21
institutional value 36, 94
instrumentalism 72–3
intellectual freedom, role of liberal education in 59–64
interdisciplinary programs
analytical skills acquired under 139–42
availability of teachers for 133–44
barriers to 134, 136–7, 152
benefits of 139–43, 151–3
and big think questions 130–31
breadth vs depth 107–8, 129–32
critical thinking in 139–42
and econometrics 141–2
and economics major 129–32, 136–7
teaching to ‘think like an economist’ 138–9
textbooks for 137–8
and faculty support, need for 143–4
incentives for 130–31
and liberal education 129–32, 136–40
and moral reasoning 140
and research rewards 135
教学
costs 136–9, 152
to ‘think like an economist’ 138–9

John Bates Clark Medal 224
Jones, Robert T. 11, 15, 17–18
journal articles
citation of 25, 155
in economics field 135, 137–8
rankings for 25, 29, 36, 154–5, 172, 179
success measured by publication of 23–5, 29, 172, 179
The Journal of Economic Literature 135
Journal of Economics Perspectives 102, 138
Journal of the History of Economic Thought 155

Kalamazoo College 175, 177
Kentucky, University of 220
Keynes, John Maynard 51, 68
Knight, Frank 51
knowledge
algorithmic and experiential 217–19, 221
pre-existing 85–7
Kronman, Andrew 6
Krueger, A. 10

land grant universities 65–6
Leamer, Lawrence 217
LEAP Report (Liberal Education and America’s Promise) 3–5
learning
approaches to
algorithmic knowledge 217–19, 221
lifelong learners 138
proficiency-based courses/degrees 108–24
self-reflective learners 87
passion for
conveying 4, 8–9, 164
importance of 20, 37, 219–20
role of major in 108
statement of standards (AACSB) 119–20
liberal arts schools/universities 114–18, 197–8, 334
economics major students’ satisfaction 191–4, 197–8, 205–9
Index

and gender 204–5
history of 65–6
incentives
for research in 7, 9, 29, 152, 182–4
for teaching in 21–3, 182–4
and liberal education goals 202–4
reasons for choice 199–202
research liberal arts schools
establishment of 177
and future career plans 150–51, 185, 200–202, 207–8, 222–3
and gender 204–5
and goals of liberal education, success at achieving 202–4
reasons for choice 199–202
student satisfaction 205–9
see also business programs under business
liberal education
academic majors, general role in 4–8, 76–8, 107–8
and algorithmic knowledge 217–19, 221
changing emphasis of 8–14
and citizenship 65, 71, 79, 99, 105, 110–11, 177, 202–6
Bok’s eight goals of 202–8
departmental responsibilities for 147–9, 166
whether faculty goals contrary to 170–72
and economics major
course content 154–5
goals of 188, 202–8, 215
intellectual isolationism of 72–3
need for change in 44–7, 103–5
relevance to 62–4, 99–100, 102–5, 166–7
role of 20, 76–9
universality of 66–7
and faculty/departments
and course content 154–5
establishing proper ‘home’ for 22–3, 99–100, 134
influence on xxiv–xxv, 7–9, 11–12, 100–101, 184
need for change in 20–23, 103–5
from bottom up 20–21, 37–8, 171–2
importance of support from 143–4
responsibilities for liberal education 147–9
freshman seminars 8, 10, 78–9, 101–2
and graduate education, compatibility with 7–8, 100, 107–8, 134
incentives for providing, lack of 182–4
influences on, globalization/technological change 157–60
and intellectual freedom 59–64
and interdisciplinary programs 129–32, 136–40
and moral reasoning 53
and student advising 151, 186
teaching and research
qualifications for 100–101, 151, 165–6
relationship between 11, 164–6, 174, 176–7, 220–21
Liberal Education and America’s Promise (LEAP) Report 3–5
lifelong learners 138
little think questions see big think questions
Living Wage movement 56
Lucas, R.E. 102
McGoldrick, KimMarie xx, 28, 117–18
macroeconomics courses 29–30, 51
Madison, James (Bishop) 217
major see academic majors; academic minors; economics major
Marglin, Stephen 217–18
market analysis, and critical thinking 48–51, 57–8
mathematics 45–6, 67, 73–4, 197–8, 204–5, 207
microeconomics courses 29–30
Middlebury College xxi, xxviii, 100–101
Mill, John Stuart 61
moral reasoning 217
and economics major 17, 53–8, 103, 202–4
alternative ethical frameworks
56–7
and critical thinking 53–7
economic efficiency/welfare
approach 54–6
importance of 54–6
as goal of liberal education 53,
202–6
and interdisciplinary programs 140
virtue ethics 56–7
welfare analysis 54–6
Myers, S.C. 116–17

National Center for Public Policy and
Higher Education 177
National Leadership Council 3–5, 83
National Science Foundation 88–9
National Task Force on Economic
Education xix–xx
Nelson, Craig 62–4
Nerlove, Marc 176–7
Newsome, M. 116
NSF-funded Teaching Innovation
Program 31

Our Underachieving Colleges 108, 202

Pareto optimality 54
passion, for learning
conveying 4, 8–9, 164
importance of, in teaching 20, 37,
219–20
peer review, teaching evaluation by 93
Perry, William G. 62–4
positivism 53
pre-professional degrees, proposals for
26–7, 45–6, 66–7, 152–3, 223
principles course 29–30, 32–4, 66,
95–6, 104–5, 168–9
Principles of Macro Economics 55
A Private Universe 86–7
professors see teaching
proficiency-based courses see expected
proficiency
public policy, relevance to economics
major 15, 18–19, 26–7, 53–4, 56–7,
79, 168, 179–80

rankings
as incentive for change

alternative teaching approaches
97–8
teaching evaluation 94
for research productivity 25, 36,
154–5, 179
Rawls, John 70–71
recruitment
of PhD students 224
of teachers 147–9, 177, 220
research
culture and nature of 9–10
in economics, focus of 6–7, 10,
30–31, 152, 165–8, 170–72, 174,
183–4
incentives for 7, 9, 29, 152, 182–4
increasing influence of graduate
education on 9, 12–14, 21, 27–9,
152, 170–71
and institutional value 36, 94
and liberal education
relevance to 149, 170–71
and teaching, relationship with 11,
164–6, 174, 176–7, 220–21
productivity/success, rankings for
23–5, 29, 36, 154–5, 179
public nature of 29
research liberal arts schools see under
liberal arts schools/universities
researchers
and big think questions 5–7, 14, 18,
102–3
characteristics of 101–2
and qualifications for liberal
educators 100–101, 151,
165–6
Richmond, University of xxi, xxviii

Salemi, Michael K. 32–3, 116, 191
Saunders, P. 217
Science Education Resource Center
(SERC) 88–9
sciences, difficulty compared with
economics 195–7
Scott, Charles E. 157–8, 221
self-monitoring 87
self-reflective learners 87
Sen, Amartya 61
Shackle, George 61
Siegfried, John J. 15, 32–3, 63, 116,
215, 219–21
Index

Smith, Adam 60–61
‘social issues’ approach to teaching economics 95–7
social sciences, difficulty compared with economics 195–7
Society of Undergraduate Learning (SOUL) 107–8
Spellings Commission 177–8
Starting Point: Pedagogical Resources for Teaching and Learning Economics 88–90
statistics 16, 19, 29–30, 46, 141–2, 158, 167, 197–8, 204–5
STEM disciplines, research in teaching techniques 83–8
Stock, Wendy A. 27
students, of economics
academic duty to 59–60
advising, improving faculty skills in 151, 186
and business 18–19, 66–7, 152–3
business programs, schools with 15, 20–21, 26–7, 66–7, 152–4, 191–209
changing attitudes of 156
demographic trends in 70–71
as ersatz business major 26–7, 46, 207–9
external influences on 157–8
foreign, attitudes of 70, 157–8, 221
gender trends in 135, 202–6
GRE scores 10, 149, 167
knowledge
pre-existing 85–7
retention 217
reasons for choice 26–7, 199–202, 207–9
recruitment, for PhD places 224
satisfaction with courses 26–7, 66, 191–4, 205–9
skills acquisition assessment 34, 114–18, 188, 194–5, 197–8
views on course difficulty 195–7
Study-in-Depth Project 116, 119
summer schools 35, 223
Sussex, University of, England 145–7
teachers see faculty
teaching
academic duty to students 59–60
advising, improving skills of 151, 186
alternative doctoral programs 178–9
approaches, in economics major 11
alternative approaches to 95–7
‘chalk and talk’ approach 97, 112–13
innovative strategies for 30–31
‘social issues’ approach to 95–7
track system 24, 179–80
big think questions vs little think questions 6–7
‘capstone’ courses 22–3, 29, 78–9, 114–18
citizenship, as goal of liberal education 65, 71, 79, 99, 105, 110–11, 177, 202–6
and deep learners 33–4
evaluation of 92–4
costs 96
teaching qualifications, proposals for 93–4
improving practices, proposals for 30–36, 74, 78, 105, 113, 222–3
incentives for 36–7, 89–90, 94, 220
promoting teaching commons 35–6
summer schools 35, 223
incentives for
journal article rankings 23–5, 29, 36, 154–5, 172, 179
lack of 174, 182–3, 220
vs research 7, 9, 21–3, 133, 152, 174, 182–4, 220–21
promoting expert-like thinking 84–5
recruitment of faculty for 147–9, 177, 220
and research
change in emphasis towards 11–14, 28–9, 150, 152
relationship between 11, 164–6, 174, 176–7, 220–21
respect for, lack of 27–8, 174, 183
self-monitoring 87
self-reflective learners, encouraging 87
skills acquisition assessment 34, 114–18
in structured manner 84–5
and students’ pre-existing knowledge 85–7
teacher training 10, 14, 21, 149
change in, proposals for 21–5, 105, 150–51, 166, 168, 170–72, 180, 220
in graduate education 21–5, 184–5
lack of 27–8, 185–6
specialist teachers, need for 220
teaching qualifications 21–5, 31, 100–101, 151
see also interdisciplinary programs
Teaching Innovation Program 105
Teagle Foundation 119
background to review xix
economics review proposals
focus of xx–xxii, xxvii
main points of consensus/disagreement xxii–xxiv
technological change, and the
economics major 145, 158–60
tenure see under faculty
A Test of Leadership Charting the Future of US Higher Education 177–8
textbooks, for economics courses 31–3, 55, 136
ethical/welfare economics issues, coverage of 54–5
homogenization of 95–7
in interdisciplinary programs 137–8
in principles courses 95–6
role of 217–19
Theory of Justice 70–71
Theory of Moral Sentiments 60–61
‘thinking like an economist’ 15–20, 215, 223–4
and ethical/moral reasoning 53–7
and expected proficiencies approach 109–24
historical development of concept 16–17
and intellectual isolationism 72–3
and interdisciplinary programs 138–9
links with other disciplines 57–8
and promoting expert-like thinking 84–5
and self-monitoring/self-reflective learners 87
student view on economics skills learned 197–8
whether appropriate goal for economics majors 19, 166–7
see also critical thinking
tragic questions 17
Truth, emergence of 48
UNC-Chapel Hill 101, 105
undergraduate education
expected proficiencies approach 118–20, 123–4
and graduate education
differing needs of 6–8, 29–30, 71–4, 100–101, 174
relevance of courses to 6–8, 29–30, 71–4, 100–101
research focus of 6–7, 10, 152, 183–4
universities
land grant universities 65–6
see also individual universities by name
utilitarianism 68
Vassar 148–9, 152
Vickrey, Bill 147
Virginia, University of 180
virtue ethics 56–7
vocational education
major seen as 8–9, 20, 95, 102
and pre-professional degree proposal 26–7
relevance to future career 99, 220–21
Walstad, W.B. 27–8
Watts, M. 97
The Wealth of Nations 217
welfare analysis 54–6
Wisconsin-Madison, University of 115
women students’, satisfaction with courses 202–6
writing skills
improving, need for 131, 154–6, 166–7, 185, 188
neglect in major 5, 101–2, 131
training methods 5, 10, 15