

INDEX

- abstract conceptualization, 18
 abstraction, 26, 42
 static and hierarchical, learning environment
 as, 102–103
 wishful ideological, learning environments
 as, 102
 accretion, 15, 17–22
 acquisition metaphor, 36
 action-led deviations, 149–150
 action-level deviations, 32, 159–160, 164
 active experimentation, 18
 active interviewing, 177
 activity systems, 5, 46, 101, 116, 221
 as alternative to learning environment,
 107–108
 generalized model of, 45
 processes of, 123
 triangular model of, 64, 221, 239
 as unit of analysis, 220–222
 activity theory, 4, 38, 42, 66–67, 69–70, 77,
 122–123. *See also* cultural-historical activity
 theory
 activity-producing activity, 141–142
 activity-theoretical approaches to learning,
 23–30
 learning and instruction and, 29–32
 rationale of sequence and, 26
 sequence of events or actions, 24–26
 transition mechanisms and, 26–27
 universality vs. plurality of learning, 27–29
 actual-empirical analysis, 25, 47–48, 142–143
 Adler, P. S., 117, 120–121, 123
 agency, 32, 63–64, 71, 74, 116, 140–141, 215–218
 as causality, 220–226
 collective, 47
 distributive, 47
 formation of, 15
 transformative, 11
 Ahonen, H., 57, 65–66, 69
 analysis, 25, 57, 107, 141–142, 153
 activity systems as unit of, 220–222
 actual-empirical, 25, 47–48, 142–143
 of expansive organizational learning, 178–179
 historical, 52, 54
 historical-genetic, 25, 47–48, 142–143,
 216–217
 Andersen, P. B., 94–97
 anesthesia, 126–127
 Antal, A. B., 173–174
 anthropological attitude, 177–178
 anticipatory simulations, 65
 anticipatory-temporal dimension, 50
 appropriate spiraling, 203–204
 appropriation, learning as, 24
 archaeological ethnography, 176–177
 argumentative grammar, 211, 220–221, 240–243
 Argyris, C., 106, 174–175
 Arievidtch, I., 23–24
 Arsen'ev, V. K., 218–219
 artifact mediation, 94–95
 assembly line process, 195
 assimilation, learning as, 24
 audible speech, mastering action with, 23
 authentic learning environments, 102
 authenticity, 103–105
 automatic operations, 141
 autonomy, 20–21
 Avis, J., 71–72
 Baeriswyl, F. J., 13–14
 Baethge, M., 83
 Bakhtin, Mikhail, 40, 44
 banks, 31–32, 83–86, 94–95
 Bannan-Ritland, B., 212
 Barab, S. A., 211–212
 Bastiaens, T. J., 103–105
 Bateson, Gregory, 9, 28, 40, 43–44, 229
 Bauwens, M., 200–201
 Beer, M., 117
 benchmarking, 68–69

- Bereiter, C., 69–70
Beyond Continuity (Streeck and Thelen), 171–173
 Bielaczyc, K., 212–214
 big bang strategy, 118–119
 birding, 196–201, 206
 blackboxing, 202–203
 Bodrozic, Z., 65–66
 Boedker, S., 94–97
 boundary crossing, 57–61, 82, 87–88
 Boundary Crossing Laboratories, 64
 boundary encounter, 205–206
 boundary objects, 59
 Bower, M. L., 245
 BPR. *See* Business Process Reengineering
 breaks, 11, 171–173
 bridging, 11, 82, 186–189
 health care and, 61–62
 mundane discontinuity and, 175–176
 Bronfenbrenner, U., 102–103
 Brown, S. L., 171–172
 Bruner, J. S., 21–23, 245
 business process, 195
 Business Process Reengineering (BPR), 118, 119, 121
- Cambridge Handbook of Learning Sciences*, 7–8, 12
 Cameron, K. S., 171–172
 capitalism, 6, 29, 39, 42, 67–68, 195
 care agreements, 54, 59–60
 care calendars, 59–60, 95–96
 care maps, 59–60
 care package model, 54
 care table, 86–87, 95–96
 care trajectory, 86–87
 causality, 220–226
 Center Campus Library, 140–141
 Center for Research on Activity, Development and Learning (CRADLE), 38–39, 63–64, 226–227
 Champy, J., 118–120
 Chang, J., 240–242
 Change Laboratory, 10, 57, 64, 91, 138–139, 144–145, 231–232
 in bank, 31–32
 cyclicity and, 153–155
 design experiments and research and, 226–227
 expansive learning actions and, 150–153, 167
 formative intervention and, 211
 Helsinki Center and, 63–64
 home care and, 72–73
 libraries and, 147–148
 in middle school, 30–31
 non-expansive actions and, 142–143
 process of, 30, 65–66
 second stimulus and, 239
 surgical operations unit and, 124–127
 wealth management and, 83
- Child, J., 173–174
 Children’s Campaign for Nuclear Disarmament, 24–25
 chronic illness, 54–55, 59, 67–68, 86–88
 Ciborra, C., 96–97
 Cobb, P., 212–213
 co-configuration, 59–60, 75–76, 81–93, 100, 206
 bank and, 83–86
 design experiments and, 213–214
 health center and, 86–90
 hi-tech company and, 90–93
 working hypothesis of, 93–99
 cognitive phase theories of learning, 13
 Cognitive Science Conference, 3
 cognitive trails and encounters, 201–206
 Cole, Michael, 107
 collaboration, responsibility and, 133
 collaborative community, 120–121, 123, 173
 collaborative learning
 computer-supported, 101–102, 105, 107, 116
 environments, 102
 collective activity, 27, 37, 39, 40, 41, 99, 166
 context and, 107
 motives of, 47
 object and, 122–123
 collective agency, 47
 collective learning, 62, 119–120
 collective transformation, 10, 138–139
 Collins, Allan, 3, 212–214
 comfort zone rules, 6
 commercialization, of education, 6–7
 commoditization, of education, 6–7
 communication technology, 102
 communities of practice, 36, 119–121
Communities of Practice (Wenger), 120
 community building, 10, 117–118, 135
 activity theory as resource, 122–123
 context and data of case study, 124–125
 intervention, for surgical operations unit, 128–133
 participatory, 117–118
 process efficiency, opposition to, 118–122
 rhetoric, 117
 community consultation, 86–87, 95–96
 community health clinics, 182
 community-based organization model, 131–132
 Competence Laboratory, 65–66, 69
 competence table, 91, 96
 complete instructional control over learning, 14
 computer systems, 178–179, 184–185
 computerization, 66–67
 computers, 111, 113, 115–116
 computer-supported collaborative learning, 101–102, 105, 107, 116

- concentric circles, 102–103
 concept formation, 74, 97, 225–226, 240, 243
 concept-level transformations, 39–40
 conceptualization, 82
 concrete experience, 18
 configuration technologies, 94
 conflict-monitoring networks, 37–38
 conscious planning, 29–30
 consolidation, 26, 48, 142
Consumer Reports, 213–214
 context, 107
 continuity, 11, 171–173, 175–179, 189
 continuity of care, 54
 continuous learning, 173–174
 contradictions, 5, 46–47, 183–184, 220–222, 240
 horizon of, 6–8
 inner, 110–111
 latent, 110–111
 peripheral, 71–72
 primary, 5–6, 27, 42, 46, 71–73
 quaternary, 27, 46, 65–66, 143–144
 second stimulus and, 239–240
 secondary, 6, 27, 46
 successfully evolving, 48
 tertiary, 27, 46
 zone of proximal development and, 222–223
 contradictory layer, 224
 corporate knowledge creation, 69–70
 corporate management, 117
 counter-scripts, of mobility, 193–195
 court reform, 52–53
Court Work in Transition (Haavisto), 175–179
 CRADLE. *See* Center for Research on Activity, Development and Learning
 Crossan, M. M., 245
 cross-functional processes, 118–119, 125–126
 cross-session object-bound cyclicity, 155–156, 158, 165–166
 Cuban, Larry, 97, 101
 cultural mediation, 43
 cultural-historical activity theory, 34, 70–71, 117–118, 138–139, 174–175
 characteristics of, 33
 critiques and, 66
 formative interventions and, 63
 mental actions and, 23
 culturally mediated intentionality, 218
 culture, 24–25, 36, 66
 Culture Laboratory, 65–66
 Cussins, Adrian, 201–205
 customer-intelligent products and services, 81
 cyclic process model, 19, 165
 cyclicity, 144, 148–151, 153–158, 165–166
 Davydov, V. V., 33, 40, 42–43, 48, 143–144
 developmental education and, 29–30
 empirical generalization and, 102–103
 learning activity and, 15, 23–24, 27–28
 mechanism of transition and, 26–27
 de Kock, A., 102–103
 Deeg, R., 171–173
 deep learning, 97–98
 Des Chene, M., 176–177
 design experiments and research, 211–214
 argumentative grammar and, 220–221, 240–243
 Change Laboratory and, 226–227
 double stimulation and, 216–220
 sociological intervention research and, 214–216
 surgical operations unit and, 228–238
 designed learning, 13–14
 destabilization, 204–205
 developmental education, 29–30
 developmental transfer, 58–59
 developmental work research, 39, 210–211
 deviations, 10, 39, 150
 action-led, 149–150
 action-level, 32, 159–160, 164
 from instructional intentions, 159–164
 object-level, 32, 149–150, 160–161, 164
 Dewey, John, 13, 15, 99
 diagnosis-related groups (DRGs), 54
 dialectical-theoretical thinking, 26, 42
 dialogical learning, 82, 100
 Dierkes, M., 173–174
 digital learning environments, 101
 digital technologies, 102–103, 105–106, 109–110, 116
 digital tools, 96–97
 digital virtuality, 196
 digitalization, 66–68
 dilemma, 4–5, 27, 46, 103–105
 Dindyal, J., 245
 directional discontinuity, 11, 62, 173, 175–176, 186–188
 directionality, of change, 171–173
 disaster relief, 196–201
 discontinuity, 171–173, 175–179, 187–189
 design experiments and, 213
 directional, 11, 62, 173, 175–176, 186–188
 mundane, 11, 62, 173, 175–176, 187–188
 discursive disturbances, 49–50
 disintegration, 56
 distributive agency, 47
 Dixon, N., 245
 DLEs. *See* dynamical learning environments
 DLR. *See* German Aerospace Center
 Dodgson, M., 174–175
 double binds, 27, 43–44, 110–111, 229, 231–232
 double loop learning, 174–175
 double stimulation, 11, 43–44, 63, 210–211, 216–220, 225–226, 234–235, 243
 DRGs. *See* diagnosis-related groups

- Dunsmore, K., 245
 dynamical learning environments (DLEs), 102, 211–212
- EAWARN. *See* monitoring network of ethnic conflicts
- economic crimes, 50–51
 Eghenter, C., 12
 Eisenhardt, K. M., 171–172
 e-learning, 37–38
 electronic learning environment, 105
 Elliot, M., 200–201
 empirical generalizations, 27–28, 102–103
 empirical knowledge, 36
 empirical thinking, 42
 enabling conditions, 20–21
 encounters, 205–208
 Engeström, Yrjö, 15, 33–34, 38–39, 60, 68, 124–125, 221
 Children's Campaign for Nuclear Disarmament and, 24–25
 Davydov and, 23–24
 dimensions of expansive learning and, 50
 historical emergence of expansive learning and, 28
 zone of proximal development and, 41
 epistemic actions, 25, 47
 equilibrium, 171–172
 Eskola, A., 222–224
 ethnographic data, 64
 European Commission, 200
 examination, of model, 26, 47–48, 142
 exchange value, 67–68, 108
 expansion by enrichment, 52, 111
 expansive learning actions, 139, 148–153, 156, 165
 Change Laboratory and, 150–153, 167
 sub-types of, 152
 types and frequencies of, 151
 expansive learning cycle, 143–144
 expansive transformations, 109
 expansivity, 9
 expected learning, 13–14
 experiencing, 10, 75–76, 97–100
 experiential learning cycle, 15, 17, 22
 experimental-genetic method, 216–217
 explicit concepts, 82
 explicit knowledge, 15, 20–21
 external shocks, 173
 externalization, 20
- FeedNavigator, 155–158, 160
 Felstead, A., 36
 Fenwick, T., 37
 fidelity of implementation, 246
 first stimuli, 64, 147, 226–227, 238–239
 Fleck, J., 94
 Foot, K., 54–55
- formation of the action's orientation basis, 23
 formative interventions, 11, 153–154, 210–211, 221–224, 238–240
 Free and Open Source Software (FOSS), 73–74
 future-oriented design, 87–88
- Gallucci, C., 245
 Gal'perin, P. Y., 23–24
 Gavelek, J. R., 245
 Gee, J. P., 97–98
Gemeinschaft, 120, 198
 generalizations, 27–28, 39, 102–103, 142
 generalized model, of activity system, 45
 generalized object, 44–45
 germ cell, 9, 26, 42, 47, 94–95, 141–142, 226
 German Aerospace Center (DLR), 200
Gesellschaft, 120–121
 gift economy, 197
 global food system, 67–68
 goal-oriented actions, 221
 gold standard, of educational research, 209–211, 213, 219
 Google Scholar, 17, 20
 Gorard, S., 212
 Gourlay, S., 20
 Greeno, James, 9, 74
 Greenstein, D., 145–146
 grey time, 126
 guided learning, 13–14
 Gulikers, J. T. M., 103–105
 Gutiérrez, K., 37–38, 144–145, 193–194
- Haavisto, V., 52–53, 175–179
 Haenen, J., 23–24
 Hakkarainen, K., 37, 69–71
 Hall, R., 74
 Hammer, M., 118–120
The Handbook of Education and Human Development, 12
 Harré, R., 245
 Hasu, M., 50, 60
 health care, 54–55, 59–60, 125–126, 171, 173
 bridging and, 61–62
 primary, 176–177, 182–183
 professionalism in, 173
 heartsink patients, 86
 Heckscher, C., 117, 120–121, 123
 Helsinki Center (Center for Research on Activity, Development and Learning), 38, 39, 63–64, 226–227
 Helsinki University of Technology, 124–125
 Herbart, Johann Friedrich, 13–14
 heteroglossia, 44
 Heylighen, F., 199–200
 hip surgery, 126–127
 historical analysis, 52, 54
 historical transformations, 38–39

- historical-genetic analysis, 25, 47–48, 142–143, 216–217
- hi-tech company, 90–93, 96
- Hmelo-Silver, C. E., 4–5
- Holmes, M. E., 171–173
- holoptic principle, 200–201, 207–208
- Holzkamp, Klaus, 70–71
- home care, 35, 45, 68–69, 71–74
 Change Laboratory and, 72–73
 interdependent activity systems of, 46
- horizontal knotworking, 97
- horizontal learning, 82, 100
- horizontal movement, 36–37, 60
- Hubbard, L., 61–62, 174–175
- hybrid educational innovations, 37
- hybridization, 36–37
- hyperobjects, 7
- hypothetical time division, 16
- Hyrkkänen, U., 57
- Hyysalo, S., 60
- ICLS. *See* International Society of the Learning Sciences
- ideal-typical cycle, of expansive learning, 110, 139–140, 143–144
- ideal-typical theoretical model, 149–150
- identity, 92–93, 97–99, 130–131
- Iľenkov, E. V., 40, 42, 70–71
- implementation, 48, 115–116, 152–154
 design research and, 212
 fidelity of, 246
 of model, 26, 142
- impossibility, 75–76, 98–99
- incidental learning, 68
- individual career, 195
- informing, 151–152
- Ingold, Tim, 194–196, 204–205
- inner contradictions, 110–111
- innovation, 140–141, 214
- innovative learning environments, 102
- instructional guidance, 26–27, 29–30
- instructional intentions, 140–141, 150, 159–165
- instructional talk, 53–54
- instrumental method, 216–217
- instrumentalities, 10, 93–97
- intentional action, 218–219
- intentional instruction, 13–14, 21
- interculturality, 65–66
- interface, 205–206
- internal speech, mastering action with, 23
- internalization, 20
 planned, 23
- International Society of the Learning Sciences (ICLS), 3
- Internet, 25, 35, 40, 66
- interviews, 177
- investment managers, 85–86, 94–95
- investment plans, 83, 94–95
- invisible breakthroughs, 222–223
- ITC reforms, 37–38
- Jakomäki middle school, 110–116
- Japan, 73–74
- Järvelä, S., 245
- JLS. See Journal of the Learning Sciences*
- Joseph, D., 212–214
- Journal of the Learning Sciences (JLS)*, 3
- justice, 52–53
- Kafai, Y., 4–5
- Kajamaa, Anu, 124–125
- Kärkkäinen, M., 49–50
- Keller, C. M., 93–94
- Keller, J. D., 93–94
- Kelly, A. E., 220
- Kerosuo, Hannele, 54, 124–125
- Kirshner, D., 102, 211–212
- Kitay, J., 83
- Kivi, Aleksis, 68–69
- knee surgery, 126–127
- knotworking, 67–68, 81–82, 89, 92–93, 155–156, 166, 206
 horizontal, 97
 libraries and, 146–147
 negotiated, 59–60
 real-time episodes, 87–88, 90
 “Knotworking the Library,” 145
- knowledge
 empirical, 36
 explicit, 15, 20–21
 stabilization, 231–232
 tacit, 15, 20–21, 70–71
 theoretical, 36, 141–142
 universal availability of, 6–7
- knowledge building, 69–70
- knowledge conversion, 20
- knowledge creation, 29, 37
 corporate, 69–70
 enabling conditions and, 20–21
 four modes of, 20
 SECI theory of, 20, 22
- Kolb, A. Y., 15, 17–19, 22
- Kolb, D. A., 19
- Kolodner, Janet, 3, 5
- Kruger, A. C., 13–14, 21
- Lambert, P., 57–58
- Land and Sea Integrated Monitoring for European Security (LIMES), 200
- Langemeyer, I., 70–71
- latent contradictions, 110–111
- Latin America, 67–68
- Laurila, Päivi, 124–125
- Lave, J., 14, 36, 119–120, 195

- lean production, 39, 195–196
 learning actions, 10, 12, 109, 141. *See also*
 expansive learning actions
 cycles of, 54–57
 non-expansive, 57
 learning activity, 24, 26, 33, 42, 141–142
 Davydov and, 15, 23–24, 27–28
 empirical generalizations and, 28
 ideal-typical sequence of, 42–43
 theoretical generalizations and, 27–28
Learning by Expanding (Engeström), 24–25, 28,
 38–39, 41, 68
 learning dialogue, 13
 learning ecology, 211
 learning environment, 10, 13, 101, 108–110, 116
 activity system as alternative to, 107–108
 authenticity and, 103–105
 circular design of studies on, 105–106
 DLEs, 211–212
 as static and hierarchical abstraction,
 102–103
 technologically mediated, 96–97
 as wishful ideological abstraction, 102
 learning events, 12
 Learning III, 28, 43–44
 learning play, 23
 learning process, 12
 learning situation, 13
 learning spaces, 17
 Learning Studio, 58
 Learning Style Inventory, 19
 learning styles, 18–19
 Leont'ev, A. N., 40–41, 107, 141, 216–219
 leveled design, 96–97
 Levinthal, D. A., 21–23
 Lewin, Kurt, 15, 48, 224–225
 libraries, 35, 138–141, 165–166
 cyclicality and, 153–158
 data and method for, 148–150
 deviations from instructional intentions and,
 159–164
 knotworking and, 146–147
 mobile, 205
 setting and intervention for, 145–147
 LIMES. *See* Land and Sea Integrated
 Monitoring for European Security
 linear interventions, 63–64
 Lintuverkko, 197–198, 206
 Linux, 40, 201
 Lippincott, A., 245
 Lipponen, L., 37, 69–71
 Local Community (thematic unit), 49–50
 local context, 73–74
 Lompscher, J., 66–67
 Long, Norman, 205–206, 214–215
 longitudinal processes, 171
 loss of object, 229–232
 Mäkitalo, J., 56
 managerial responsibility, 131
 March, J. G., 21–23
 market-oriented practices, 7
 Martens, R. L., 103–105
 Martin, L., 240–242
 Martin, T. S., 245
 Marton, F., 70–71
 Marxism, 66, 70–71
 mass customization, 195–196
 mass production, 39, 195–196
 mass-produced standard services, 160–162
 material objects, mastering action with, 23
 Maxwell, J. A., 222–224
 McCay, B. J., 12
 McCrone, S. M., 245
 McVee, M. B., 245
 mediated action, 39–40, 107
 mediation, 66–67
 artifact, 94–95
 cultural, 43
 multi-mediation, 94–95
 medical care, 59
 medicine, 119, 210
 Mehan, H., 61–62, 174–175
 Melucci, A., 215
 mental actions, stagewise formation of, 23
 Middleton, J., 212
 Miettinen, R., 19
 miniature cycles, of learning, 56–57, 139–140,
 154–155, 158
 Ministry of Social Welfare and Health, 176
 mirror material, 64, 76, 112, 147, 226–227
 Mishler, E., 178–179
 mobile libraries, 205
 mobility, 193–196, 198
 modeling, 26, 47–48, 82, 142, 153–154
 monitoring network of ethnic conflicts
 (EAWARN), 54–55
 moral-ideological dimension, 50–51
 motivation, 41, 105–106
 motivational sphere, 68
 motives, 41, 47, 108
 Mukute, M., 143–144
 multi-headed strategy, 91–92, 96
 multi-level instrumentalities, 10
 multi-mediation, 94–95
 multi-professional teamwork, 180, 183–186,
 188–189
 multi-voicedness, 44
 mundane discontinuity, 11, 62, 173, 175–176,
 187–188
 mycorrhizae, 193, 198–201, 207
 narrative interviewing, 177
 narratives, 178–179
 negative talk, 52, 111

- negotiated care model, 54
 negotiated knotworking, 59–60
 negotiated total wealth management, 31
 network of utilization, 60
 networked learning environments, 102
 network-ideological level, of learning, 60–61
 neutral stimulus, 235, 239
 “New Forms of Expansive Learning at Work:
 The Landscape of Co-Configuration”
 (study), 81
 Nilsson, M., 54–55
 Nohria, N., 117
 Nonaka, I., 15, 20–22, 69–71, 173–174
 non-authenticity, 104–105
 non-expansive actions, 151–152, 165–166
 non-expansive learning actions, 57
 Norman, D. A., 15–22

 objectification, 82
 object-level deviations, 32, 149–150, 160–161, 164
 object-oriented activity systems, 221
 official mobility scripts, 193–195
 Ohlsson, S., 245
 Olson, D. R., 215–216
 organization chart, 131–132, 239–240
 organizational change, 10, 121, 171, 173–176
 organizational development, plots of, 178–179
 organizational intention, 20–21
 organizational learning, 21–23, 52, 171
 conclusion to, 187–189
 continuity and discontinuity and, 171–173
 fieldwork and data for, 176–178
 organizational change and, 173–176
 process of, 183–187
 steps in analysis for, 178–179
 Orlikowski, W., 171–172
 Ortony, Andrew, 3
 Oser, F. K., 13–14
 Oulu University Hospital, 211

 Paavola, S., 37, 69–71
 participation metaphor, 36–37
 participatory community building, 117–118
 partnership level, of learning, 60–61
 path dependency, 171–173
 PD. *See* perspective-dependence
 Peck, C. A., 245
 peer production, 40, 76–77, 193, 195–196
 peripheral contradiction, 71–72
 perspectival concepts, 74–75, 226
 perspective-dependence (PD), 201–205
 perspective-independence, 201–202
 phase theories of learning, 13
 physical environment, 115
 Piaget, Jean, 15
 Pihlaja, J., 39, 57, 65–66
 pilot care process, 117–118

 planned internalization, 23
 play, 24–25
 plots, 178–179
 plurality, universality vs., 27–29
 Polanyi, Michael, 70–71
 political-ethical dimension, 8–9
 Poole, M. S., 171–172
 Popper, K., 70–71
 population-based care, 180, 182–187
 possibility concepts, 74–75, 226
 post-behaviorist process theories of learning,
 15–23
 power, 69–70
 powerful learning environments, 102
 primary contradiction, 5–6, 27, 42, 46, 71–73
 primary health care, 176–177, 182–183
 privatization, of education, 6–7
 process efficiency, 117–122, 135
 activity theory as resource, 122–123
 context and data of case study, 124–125
 intervention, for surgical care unit, 125–128
 process enhancement, 10, 117–118, 136
 process redesign, 119–120
 process theory of learning, 10, 12–15, 29, 32–34,
 245
 process-community dichotomy, 135–136
 production level, of learning, 60–61
 product-service combination, 81
 project level, of learning, 60–61
 projective identity, 98–99
 psychological functioning, 43, 218
 punctuated equilibrium model, 171–172,
 174–175
 Puonti, A., 50
 pyramid models, 155–156, 158, 160–166

 quality improvement methods, 187
 quaternary contradiction, 27, 46, 65–66,
 143–144
 questioning, 25, 47–50, 57, 141–142, 153, 156–158
 Quinn, R. E., 171–172

 radical expansion, of object, 136
 radical social movements, 73–74
 Radinsky, J., 5
 randomized control trials, 210
 rationale of sequence, 26
 real-life learning environments, 102
 real-time knotworking episodes, 87–88, 90
 real-world identity, 98–99
 Red Cross, 196–199
 redundancy, 20–21
Reengineering the Corporation (Hammer and
 Champy), 119–120
 refinement, 213
 reflection, 26, 48
 reflective observation, 18

- Reform as Learning* (Hubbard, Mehan and Stein), 174–175
 Regalia, I., 83
 regionally based care, 178–180, 183–185
 regularity approach, 222–224
 remembering, 177
 requisite variety, 20–21
 research challenge, expansive learning as, 141–145
 responsibility, 131, 133, 236–238
 role play, 65
 Rückriem, G., 66–68
 Rumelhart, D. E., 15, 17–22
 runaway objects, 7, 40
- Salovaara, H., 245
 Sannino, A., 31, 38, 46, 48, 62, 68, 76, 99, 138, 160, 245, 247
 Schank, Roger, 3
 Schön, D. A., 106, 174–175
 school reform process, 61–62, 174–175
 Schwartz, D. L., 240–242
 SECI theory of knowledge creation, 20, 22
 second stimulus, 64, 147, 216–217, 227, 232–236, 238–240
 secondary contradiction, 6, 27, 46
 secondary health care, 182–183
 self-determination, 29–30
 self-fulfilling prophecy, 21, 29–30, 32–34
 self-movement, 222–223
 Senge, P., 174–175
 Seppänen, L., 50, 54–55
 service palette model, 160–162
 session-level cyclicity, 154–155
Seven Brothers (Kivi), 68–69
 Sford, Anna, 36
 Shuell, T. J., 13
 single loop learning, 106, 174–175
 skateboarding, 196–201
 Slack, R., 94
 Slegers, P., 102–103
 Sloan, T., 245
 small-scale cycles, of learning, 56–57
 smart learning environments, 102
 social capital, 82
 social interface, 205–206
 social media, 7, 25
 social movements, 7, 73–74
 social negotiation, 200–201
 social production, 40, 76, 193, 195–196, 206
 social welfare services, 179–180
 socialization, 20
 societal integration, 54
 sociological intervention research, 214–216
 socio-spatial dimension, 8, 50
 Soule, S. A., 7
 sparring, 84, 94–96
 spearheads, 53–54
 specialization, 236–237
 stabilization, 201–205
 stabilization knowledge, 231–232
 stagewise formation, of mental actions, 23
 starting point, of linear interventions, 63
 Stein, M. K., 61–62, 174–175
 Stewart, J., 94
 stigmery, 198–201
 strategy table, 91, 96
 Streeck, W., 171–173
 structural model of learning, 18–19
 structuring, 15, 17–22
 subterranean learning, 82, 100
 summarizing, 151–152
 surgical operations unit, 124–125, 228–238
 Change Laboratory and, 124–127
 community building intervention for, 128–133
 long-term consequences of new model, 133–135
 process efficiency intervention for, 125–128
 process-community dichotomy and, 135–136
 surgical specialties, 125–126, 131
 Sutter, B., 14
 swarming, 76–77, 193, 196–198, 206
 systemic objects, 141–142
 systemic-developmental dimension, 50
- Tabak, I., 5
 tacit knowledge, 15, 20–21, 70–71
 Takeuchi, H., 15, 20–22, 69–71
 Talyzina, N. F., 23
 task domain, 105–106
 Taylor, C., 212
 team management, 185–186
 teamwork, 178–184, 188–189
 technological innovations, 60
 technologically mediated learning environments, 96–97
 temporal breaks, 173
 temporal dimension, 8
 temporal myopia, 21–23
 tertiary contradictions, 27, 46
 textualization, 82
 Thelen, K., 171–173
 theme working, 49–50
 theoretical agendas, 66
 theoretical concepts, 26, 36–37
 theoretical generalizations, 27–28
 theoretical knowledge, 36, 141–142
 Theory E, 117
 Theory O, 117
 third spaces, 32, 37–38, 144–145, 160, 162–164, 193–194
 Toiviainen, H., 60–62
 Tomasello, M., 13–14, 21
 tool constellation, 93–94, 96–97

- top-down change efforts, 126
 traditional craft activities, 195, 198
 trail-blazing, 97
 tramping artisans (*Wandergesellen*), 195
 transformation, 109
 collective, 10, 138–139
 concept-level, 39–40
 expansive, 109
 historical, 38–39
 of object, 49–52
 of practice, 225–226
 transformative agency, 11
 transformative learning, 82, 93–94, 100, 197
 transition mechanisms, 26–27
 transport, 194–195
 triangular model of activity systems, 64, 221, 239
 tuning, 15–22
 turning points, 49–50
 two patient pipelines, 86, 95–96
- United Kingdom, 69
 United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER program), 200
 universalism, 14, 21, 23–24, 32–34
 universality, plurality vs., 27–29
 universalization, 29
 University Hospital of the City of Oulu, 228
 University of Helsinki, 35, 38, 140–141, 155–156, 226–227
 University of Helsinki Library, 145–146
 university-school partnerships, 60
 UN-SPIDER program. *See* United Nations Platform for Space-based Information for Disaster Management and Emergency Response
 unvoiced external speech, mastering action with, 23
 use value, 67–68, 108
 utilization rates, of operating rooms, 133–135
- Valsiner, J., 216–218
 Van de Ven, A. H., 171–172
 Van der Veer, R., 216–218
 Vasilyuk, F., 75–76, 98–99
 Vayda, A. P., 12
 vertical improvement, 36
 VET. *See* vocational education and training
- Virkkunen, J., 57
 virtual identity, 98–99
 virtuous representational activity, 203–205
 visibilization, 82
 vocational education and training (VET), 68
 vocational teacher education, 58
 Voeten, M. J. M., 102–103
 Vygotsky, L. S., 40, 43, 232, 245
 agency and, 224
 double stimulation and, 43–44, 63, 210–211, 216–220, 234–235, 243
 formative interventions and, 210–211
 mediated action and, 39–40, 107, 220–221
 neutral stimulus and, 235, 239
 zone of proximal development and, 41, 76–77, 207
- Wandergesellen* (tramping artisans), 195
 wayfaring, 194–195, 206
 web 2.0, 7, 40, 66–68
 web-based tools, 146–147
 Wenger, E., 14, 36, 119–121, 195
 “where to?” artifact, 95–97
 Wikinomics, 197–198
 Wikipedia, 40, 195–196, 200–201
 wildfire activities, 11, 76–77, 193
 cognitive trails and encounters and, 201–206
 communities as mycorrhizae and, 198–201
 key features of, 202
 meaning and importance of, 196–198
 mobility and, 193–196
 new potentials for learning and, 206–208
- Williams, R., 94
 work development, plots of, 178–179
 work-based learning, 37
 worker level, of learning, 60–61
 Working Health Center project, 176–177, 179–180, 182, 185–186
 work-related learning, 138
- yardsticks, of learning, 52
 Young, M., 68–70
- zone of proximal development, 6, 41, 44, 47, 76–77, 204–205, 207
 contours of, 9
 contradictions and, 222–223
 Engeström and, 41
 expansive learning as movement in, 52–54