Materiali e documenti

Psycho-pedagogical research in a Double-degree programme

edited by
Guido Benvenuto and Maria Serena Veggetti

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To all the students who believed in this course of study and in an international perspective.

And to keep alive the memory of our collegue Viktor Aleksandrovič Guruzhapov, suddenly disappeared.

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Abstract

This volume collects the contributions of many colleagues from the teaching board of Double Degree Joint Master's Programme in Pedagogy and Educational Sciences and Training of Sapienza University of Rome and two prestigious universities of the Russian Federation: Moscow Federal University for Psychology and Education (MSUPE) and North-Caucasus Federal University (NCFU) at Stavropol. This double degree programme stems from the intense coordinated work between the universities, in particular: the agreement with the University of Moscow between Nicola Siciliani de Cumis, Giuseppe Boncori and Maria Serena Veggetti, Sapienza's professors, and Vitaly Vladimirovič Rubzov for the MSUPE and the agreement with the University of Stavropol between Piero Lucisano, Guido Benvenuto and Maria Serena Veggetti, Sapienza's professors and Tatiana Taranova, Valery Kirillovič Shapovalov for the NCFU assisted by Nadežda A. Palieva.

The agreements were stipulated to favor and increase research collaboration, pedagogical studies and joint congressual activities and led to the Master's Degree course, to offer young students from different academies further knowledge on common themes and research options in an international perspective and with a comparative approach.

The present anthology is meant to review the positions and studies that individual teachers from the different universities involved presented in recent years, during online courses, in the lecturing, in the meetings and to discuss their possible opportunities.

Since the master's degree was established, in 2010-2011 with MSUPE and 2014-2015 with NCFU, many students of these universities have completed courses and achieved a double degree in Sapienza, as some Italian students are currently doing at the prestigious University of Moscow.

The volume puts forward this programme, to spread its structure, the theoretical assumptions and the various positions. The contributions are meant to testify a keen interest in internationalization that Sapienza is carrying out. The contributions collected give the reader a chance to share a common interest in the promising approach implied by the Historical-cultural trend in Psychology and Pedagogy of the Vygotskij's thought, which seems a must in psycho-pedagogical reflections, and in organizing and evaluating school activities.

Maria Serena Veggetti, Guido Benvenuto

Introduction: From international cooperation to higher cognition

Maria Serena Veggetti, Guido Benvenuto

The double degree in "Psychology and Pedagogy for school education", shared by the Sapienza University of Rome, located at the Faculty of Medicine and Psychology and the Moscow State University for Psychology and Education (MSUPE, in Russia, training school psychologists, educators, psychologists), has been since 2010 a first example of the internationalization of a joint Magister Curriculum.

At the level of higher education, a double degree acts as a pivotal form of internationalization of studies and, consequently, for the universalization of knowledge (Veggetti & Benvenuto, 2012, 2014, 2016).

A scientific cooperation among scholars who have participated and are participating in the double degree project in the two countries, Italy and Russia, stems from the common understanding that any form of higher learning or vocational training doesn't mean assuming knowledge transmitted by teachers or educators, or adults, but raising awareness of the personal experience in the social context, which only gives way to the growth of one's entire personality, becoming "developmental" (V.V. Davydov, 1972, 1988, 1996; Rubzov, 2005). Furthermore, the theoretical framework of the curriculum of the double master degree moves from the perspective of the historical cultural psychology formulated by L.S. Vygotskij (1926, 1934).

In our curriculum for the double degree, the exposed conception has a crucial meaning in the preparation of educators and teachers,

together with a deep knowledge of the methods and practice of research in education, requiring the formation of high skills in the empirical analysis of educational contexts.

Being aware of our shared methodological foundations, we moved towards the creation and adoption of a Convention between the two universities of Rome and Moscow (2010) [1] regulating the new common curriculum for the programme in "Psychology and pedagogy in the education of school pupils" (Pedagogia e Psicologia dell'Educazione degli Scolari) giving way to a double degree in education for the students of both institutions, following precise rules, for example, to earn not less than 30 CFU in the partner university, that is to say that such minimal amount of lectures, exams, professional training has to be attended at the partner university. The student willing to pursue the double degree has to write the final dissertation in one European language, present it to the partner university and discuss it with a joint Committee. As a result, the final degree will be recognized as valid in the two countries. The project was supported by a grant of the MIUR (the

[1] The text of this Convention, subscribed by the Rector of the *Sapienza*, prof. L. Frati and by the Rector of the MSUPE V.V. Rubzov, on May, the 20th, 2010, as well as by the Heads of all the Faculties involved at the two universities and by the Coordinators of the Master courses of studies regulates a programme, which started from the I semester of A.A.2010-11. The Convention refers to a previous General Agreement for scientific cooperation (8.10.2007), to a Protocol of intents among the involved Faculties (May, the 26th, 2008), to an adjunctive Agreement for the students mobility and exchanges (May, the 26th, 2008) and to the approval by the scientific Councils of the involved Faculties. The Magister degree takes 2 years with 120 CFU. This degree, as the Executive regulations (subscribed by the Rectors on May, the 20th, 2010) state, may be pursued in Rome and in Moscow, but every student has to earn an amount of not less than 30 CFU at the partner university, among which at least 18 CFU consisting in exams, as he or she has to define with a Committee, in which the didactical Committee of the Faculty of Philosophy of the Sapienza participates, at that time existing as an autonomous Faculty, where the Magister Course was located, and the Academic Committees of the Faculties of Instructional Psychology and of Distant learning of the Russian university MSUPE. Moreover, the student has to make training activities and prepare a dissertation to be discussed at the partner university.

Italian Ministry of Education) for the inter-university cooperation (Cooperlink 2010) [2].

During the first year of the joint curriculum, in the 2010-11, Courses of frontal lessons were hold for the students of the two universities in each of the two partner institutions. In these years the lessons and the meetings have multiplied, also thanks to the Skype connections and recently using webinar on platform prepared by the Moscow University.

Analogous forms of executive protocols to the general agreement and a similar Convention were subscribed with the Northern Caucasus Federal University of Stavropol [3].

Moreover, the Italian tutors, Benvenuto, Lucisano and Veggetti engaged in specific joint Courses of lectures on the topics of our Master Courses, supported by the partner university, since the 2015-16 academic year. Some of these opportunities were predisposed by a joint engagement of the University and the Worldwide Forum of the Russian Church at Stavropol.

The concrete participation of shared research practice leads every student to realize a study-research on psycho-pedagogical issues, initially discussed with the tutor of their own university and then agreed with the tutor of the partner university. The designation of tutors in the two universities is obviously the responsibility of a joint college. At the end of the double-degree graduate study course every student had the opportunity to present and discuss the final dissertation research with his tutors and the joint degree commission.

Several topics and research methodologies agreed for the planning, implementation and discussion of the research and studies conducted were numerously and greatly enriched by the different tutor teachers involved and the entire joint degree course college. The

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[2] The project, with the title "Exchange of good practices through pursueing joint magister degree", was approved with the note n. 765 on June, the 9th, 2010 (CII10CEE93), among a total of 44 on the national level and of the two at the Sapienza University.

[3] The name of the town means City of the Cross. It is located in a peculiar zone of famous mineral sources, considered as having a long life effect. Intense and traditional the relations with Italy and Italian enterprises.

list of graduates of these years, with the titles of their final dissertations, which we report below, may well represent the richness of the joint work, which made this master's course a beacon for psycho-pedagogical studies and comparison between methodologies, international and intercultural training programmes.

The list of graduates of all these years, with the titles of the final dissertations, reported below, may well evidentiate the overgrowth of the yearly joint work.

Nevertheless, it is important to point out the very efficient cooperation demonstrated by the students' office of Sapienza. Here an empathic support was displayed by the Head Secretary, Giulia Mascia, who never left the teaching staff alone to face the unusual plurilingual burocratic practice often during critical functioning of the entire informatic infrastructure of the mega-ateneum Sapienza.

To cut it short with exposing our experience of internationalization and give way to the reading of the following partners contributions, let us conclude with some words by Rubzov, the Rector of the partner University, and world known Vygotskian scholar in psychology, when he explains the reason of an historical cultural opening of the school education at the present time [4].

The true sense of an historical cultural school education today lies not or at least not only, in the making of a school, of whatever prophile, international, but in the fact that increasing dialogue at an intercultural level will increase the types and number of communities not indifferent to other cultures, feelings, narratives, this way elevating the level of human intercultural capital, also as far as the so called soft skills are referred to.

Concluding our brief introductive presentation, we want, as professors directly involved in the mutual teaching/learning, to stress the unusual, continuous engagement in the pursuing a double degree valid in Europe and over the world by the young students of the Russian Federation. Many of them often even start to study Italian in order to manage this encounter with our culture. Therefore, a much

[4] In Russia a new Historical cultural School is functioning as an experimental concrete way of formal instruction, for primary and elementary level approved by the Russian Ministry of education.

deeper knowledge and understanding of our countries was disseminated among Russian students. They often go on, after accomplishing graduate studies, to pursue the doctoral degree at Sapienza in the same pedagogical area. Thus, we could well state that Sapienza went from Montessori to Vygotskij-Rubzov!

A very important result indeed, for the young people often called, in our Western countries, Millennials.

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Double degree graduate list (2011-2019) - MSUPE-MGPPU (Mosca)

GRADUATE	DISSERTATION	TUTOR/SUPERVISOR
	2011-2012 (Italian Students)	
EMILIANE RUBAT DU MÉRAC	*Impact of students' learning strategies on performance*	*Lucisano Pietro, Siciliani de Cumis Nicola*
ELEONORA MALERBA	*EVAL'D VASILEVIC IL'ENKOV: The Dialectics of the Abstract and the Concrete and The Activity Theory*	*Veggetti Maria Serena, Siciliani de Cumis Nicola*
MAURO CAMPO	*The study of emotions in Vygotskij: the theory of emotions*	*Lucisano Pietro, Veggetti Maria Serena*
	2011-2012	
ANNA ANTONOVA	*Efficiency of upbringing system in providing psychological safety for the students of 12-14 years*	*Lucisano Pietro*
NATALIA MOROZOVA	*Understanding of ethic acts of literature's heroes by teenagers (novel by J. Rowling "Harry Potter and the goblet of fire"*	*Zancan Marina*
SVETLANA ROMANOVA	*Prevention of anxious states of students in military band before testing or concerts*	*Scoppola Ludovica*
JEANNE TRIFONOVA	*Signs and symbols of collectivism in the opinions of students more than the elderly of the modern metropolis (on the basis of the ideas of A.S. Makarenko)*	*Siciliani De Cumis Nicola*
MARIA ORAEVSKAYA	*Relationship between images of classical art and mass culture in aesthetic preferences of children of 8-10 years (based on graphics)*	*De Luca Martina*
	2012-2013	
EKATERINA MOROZKINA	*Follow the process of defining professional identity and insertion of students with Special Needs in Education*	*Veggetti Maria Serena, Benvenuto Guido*
ELENA LEONOVA	*Psycho-pedagogical conditions for the formation of the collective in young schools*	*Rubat Du Merac Emiliane, Lucisano Pietro*

ELENA OKHOTNIKOVA	*Development of communication skills of Russians mother tongue schools in Italian language learning*	*Sposetti Patrizia, Siciliani De Cumis Nicola*
OLGA KUDRIAVTCEVA	*Characteristics of identity training in journalistic students*	*Siciliani De Cumis Nicola, Sposetti Patrizia*
SVETLANA KOSTROMITINA	*High quality professional training and valorial orientations in master's degree students in psycho-pedagogical sectors*	*Lucisano Pietro, Asquini Giorgio*
	2013-2014	
ANNA KHRUSHCH	*Development of communicative skills in adolescents with dysgraphia and dyslexia*	*Asquini Giorgio*
IRINA TARANENKO	*Use of group interaction techniques during lessons in the first elementary class*	*Veggetti Maria Serena, Benvenuto Guido*
ANNA ALEXEEVNA ZARECHNAYA	*Training communication skills in students of the second classes*	*Veggetti Maria Serena, Benvenuto Guido*
EVGENIYA VASILYEVA	*Interrelation of professional orientation and emotional breakdown between psychology graduates and workers*	*Veggetti Maria Serena*
SERGEI POLUKAROV	*Professional identity and professional reflection: developmental lines in magistral graduates with basic education in psychology and other disciplines*	*Siciliani De Cumis Nicola, Veggetti Maria Serena*
ILMIRA SHILOVA	*Relationship between intelligence, attention and regulatory actions in children of 7 and 8 years*	*Lucisano Pietro*
	2014-2015	
EKATERINA APASOVA	*Developmental dynamics in determining the characteristics of personality between military corsists*	*Lucisano Pietro, Kulagina Irina*
IRINA POPOVA	*Training of value orientations in children with mental delay in the work process with a psycho-pedagogist*	*Salerni Anna, Kulagina Irina*
NINA ILYUKHINA	*Peculiarity of the representation of the self in the young students of school institutes who include residency*	*Salerni Anna, Egorova Marina*

ANNA KHAPERSKAYA	*Peculiarity of professional auto-determination in young migrants in the metropolis*	*Veggetti Maria Serena, Pavlova Olga*
ELIZAVETA EMELIANOVA	*Training of a consciousness of citizenship between first and second year of students in psychology and pedagogy*	*Lucisano Pietro, Shapovalenko Irina*
YULIYA KOCHETOVA	*Differences in the emotional intellect in the teen of the two sexes*	*Benvenuto Guido, Lubovskij Dmitrij*
OLGA GVOZDEVA	*Importance of role games in training communication skills during the lessons of a foreign language*	*Benvenuto Guido, Zaytsev Sergey*
VIOLETTA MITCUL	*Development of tolerance in young russians compared to peers of other nationality*	*Veggetti Maria Serena, Pavlova Olga*
	2015-2016	
VARVARA GAYDUKOVA	*Particularity of the use of ICT in the teaching of foreign languages*	*Asquini Giorgio, Pryazhnicova Elena*
ELENA GOLDENBERG	*Development of the professional competence of future foreign language teachers through regular evaluation of professional progress*	*Benvenuto Guido, Szpunar Giordana*
OLGA PARSHIKOVA	*Comparative analysis in the use of ict and traditional instruments in the learning of a foreign language of university students*	*Benvenuto Guido, Cesareni Maria Donata, Adaskina Anna*
ALEXEY STAROSTIN	*Development of communication skills of children of elementary schools in the period of school integration*	*Salerni Anna, Shvedovskaya Anna*
KRISTINA LOBAKOVA	*Anxia's phenomenon in entering secondary school*	*Veggetti Maria Serena, Sokolov Vladimir*
IANA PODVIGINA	*Using game as a way to develop the economic competence of secondary class students*	*Veggetti Maria Serena, Shvedovskaya Anna*
	2016-2017	
KRISTINA ORLOVA	*Methodology of detecting teachers' representations about the emotional component of the teaching process*	*Veggetti Maria Serena, Benvenuto Guido, Lubovskij Dmitrij*

KIRILL KRUGLOV	*Development of regulative universal educational actions (adu) in teenagers during geography lessons*	*Asquini Giorgio, Cesareni Donatella*
YULIA KONYUKHOVA	*The perception of the university students of the humanistic faculty on the opportunities and dangers of social networks*	*Asquini Giorgio, Cesareni Donatella, Guruzhapov Victor*
SVETLANA ALMAZOVA	*Development of the space representation of children of 5-7 years today*	*Pesci Furio, Lanciano Nicoletta*
TATIANA BORZOVA	*Self-education process in teenagers on gender issues*	*Sposetti Patrizia, Shvedovskaya Anna*
ALEXANDRA KOVALEVSKAYA	*Modern approaches to analysis and correction of writing disorders in elementary students*	*Sposetti Patrizia*
EKATERINA LAZAREVA	*Aesthetic education in school and in extrascolastic activities in visual arts and literature*	*Benvenuto Guido, Lucisano Pietro*
JULIYA CHIBISOVA	*Students ideas of humanitarian universities about the value of education*	*Veggetti Maria Serena, Lucisano Pietro*
NATALIA LOSEEVA	*Development of the emotional sphere of adolescents who live in orphanage institutions*	*Salerni Anna, Szpunar Giordana*
YULIYA BRISEVA	*Study of the values and the self-efficacy of students on gender issues*	*Benvenuto Guido, Pavlova Olga*

2017-2018

ANDREY TITOV	*ICT and development of the logical thought of students 7-11 years*	*Asquini Giorgio, Zajzev Sergej*
EVGENIYA PAVLOVA	*Impact of the app on the storage of Chinese writing*	*Benvenuto Guido, Szpunar Giordana*
PAVEL PLATYGIN	*Psychological preparation of adolescents (16-17 years) for the choice of prosecution of studies or work*	*Lucisano Pietro, Shvedovskaya Anna*
YULIA REGINA	*Attitude of adolescent minors in the Spanish language in schools with an intensive study of the Spanish language*	*Benvenuto Guido, Shvedovskaya Anna*
IANINA SMIRNOVA	*Formation of the mental representations of children of 7-9 years on the report of goods and money*	*Asquini Giorgio, Zemlyanskaya Elena*

	2018-2019	
KIČEEV PAVEL LEONIDOVIČ	*Formation of selforganizing skills in 9-10 aged children in the sfere of technical scientifical*	*Livi Stefano, Lucisano Pietro*
MAČINA EKATERINA SERGEEVNA	*Teacher's representations of individual didactical difficulties in 7-9 aged children*	*Szpunar Giordana, Lucisano Pietro*
NIKITINA ALEXANDRA IGOREVNA	*Reflective analysis of types of problem solving in 7-8 aged children on the basis of chess game*	*Salerni Anna, Benvenuto Guido*
RIZAEVA ŽANNA BAKHTIEROVNA	*Overcoming the communicative barriers in gifted boys by means of theater communication*	*Sposetti Patrizia, Veggetti Maria Serena*
TSYBENOVA DOLGOR DALAEVNA	*Available techniques for the solving of economic problems by 7-9 aged children*	*Asquini Giorgio, Benvenuto Guido*

Double degree graduate list (2016-2019) - MS (Stavropol)

GRADUATE	DISSERTATION	TUTOR/SUPERVISOR
	2016-2017	
POTAPOVA VALENTINA NIKOLAEVNA	*Project management as a condition of innovative preschool educational istitutions development*	*Taranova Tatyana Nikolaevna*
BABINA EVGENIYA MIHAILOVNA	*Artistic personality culture education of students by the means of art in boarding (military) schools*	*Taranova Tatyana Nikolaevna*
	2017-2018	
LABUZNAIA ANASTASIIA	*The development of conflictological competence in high school students*	*Benvenuto Guido, Veggetti Maria Serena*
FATYANOVA TATIANA	*Preparing expert-activity in instruction in its psychological and organizational dimensions*	*Salerni Anna, Benvenuto Guido*

GRIGOREVA IULIA	*Psychological and pedagogical conditions ensuring the psychological security of a teenager's personality in cyberspace*	*Lucisano Pietro, Livi Stefano*
	2018-2019	
SAVCHENKO ANASTASIA MIHAILOVNA	*Gamification as the method of formation of social and pedagogical competence at students in the conditions of modern group of leaders*	*Asquini Giorgio, Cesareni Donatella*
SHVEZ OLGA GENAD'EVNA	*Pedagogical maintenance for the social and personal development of younger schoolchildren in the establishment of supplementary education*	*Benvenuto Guido, Livi Stefano*
PORTNOV SEMEN ALEKSEEVIC	*Prevention of asocial behavior of adolescents in the process of civic education*	*Szpunar Giordana, Sposetti Patrizia*
KOZHEMYAKO VERA VLADIMIROVNA	*Psycho-pedagogical support for personal development in children with delays in the psychic development of the Psychology Center*	*Lucisano Pietro, Veggetti Maria Serena*
BATAGOVA ANGELA ALEKSEEVNA	*Development of competence of project and research activity for primary students*	*Veggetti Maria Serena, Sposetti Patrizia*
YARKOV MIHAIL VLADIMIROVIC	*Labor education of students in the College of the 21st century*	*Benvenuto Guido, Salerni Anna*

1. Sociogenesi dell'azione congiunta: la comprensione reciproca come preliminare per capire le cose

Vitaly Vladimirovič Rubzov

Premessa

Intervista al Rettore dell'Università Federale di Mosca per Psicologia e Educazione Vitaly Vladimirovič Rubzov curata da V.T. Kudrjavzev, allievo e collaboratore di V.V. Davydov, che inaugura una serie di incontri con psicologi dal titolo *Io e la psicologia. Storie di vita* [1].

Si propone di far presentare agli intervistati il motivo per cui famosi psicologi hanno aderito alla psicologia storico-culturale nelle loro ricerche e nella pratica professionale.

In questa intervista Rubzov spiega perché sia passato dal completamento della prima formazione universitaria in fisica (tra l'altro effettuata presso il famoso M.I.F.I., Istituto di Mosca per la fisica, sede di docenti come Basov, Prohorov, Goldfarb e presso cui aveva incontrato, tra le altre personalità della scienza, il filosofo Il'enkov) alla psicologia, divenendo collaboratore di V.V. Davydov e poi suo successore nella Direzione dell'Istituto di Psicologia dell'Accademia Russa per l'educazione.

Intervista

[…] Siamo i portatori viventi di forti tradizioni scientifiche. Fintantoché i fatti della nostra biografia scientifica avranno battiti,

[1] *Kul'turno-istoričeskaya psihologija* 2018, vol.14, N.4 pp. 106-121.

saranno vivi anche i nostri maestri e la stessa scienza vivrà e darà impulso ai giovani per agire coerentemente avvicinandosi ad essa.

Mi chiedi della mia vita precedente alla psicologia. Sì, ero vivo, anche in epoca precedente la psicologia. La mia vita anteriore alla psicologia era connessa con il MIFI (*Moskovskij Institut Fisiki*). Una istituzione superiore di eccellenza. Che ho concluso con ottimi risultati. la Facoltà di fisica dell'energia era specializzata, fra l'altro, sulla fisica delle basse temperature, perché a quei tempi l'iperproduttività era di gran moda. Ho avuto la fortuna di avere come docenti fisici eminenti, pluripremiati, accademici, per esempio i proff. Basov e Prohorov.

Allora lavoravo presso la Cattedra di Sovraproduttività e preparavo il lavoro di diploma…

Kudrjavzev – Chi era il tuo tutor?

Rubzov − È stata la persona che ha supervisionato il mio lavoro, formato la mia visione professionale sulla fisica e, cosa principale, sulla sperimentazione. Ecco il rapporto "docente – discente", che ha orientato i miei progetti professionali e che certo ha egemonizzato i miei interessi. Non era possibile barare. Fisica generale la insegnava il prof. Naum Jakovlevič Goldfarb. Aveva scritto in tre volumi "*Principi di fisica generale*". Era una favola. Non c'erano problemi per la frequenza – a lezione da lui andavamo sempre, perché era incredibilmente interessante. Mi sembrava che raccontasse la fisica generale come una storia avvincente.

In queste storie esponeva un contenuto complesso. Se dovessi rispondere alla domanda su che cosa mi ha dato lo studio della fisica dovrei dire quanto segue: il mio lavoro principale è stata la dissertazione scientifica su "*Organizzazione e sviluppo delle azioni congiunte dei bambini nel corso dell'istruzione*". Scritta in russo e pubblicata in Russia, uscì successivamente negli USA in inglese.

Ma pochi sanno che ho scritto anche un altro libro edito solo in inglese (in russo non è mai uscito). In questo attuavo una comparazione tra teorie psicologiche e fisiche. Per la fisica e per la psicologia, come saprai, viene un momento, in cui c'è esigenza di nuove teorie, che vengono definite non classiche. Si presenta un "osservatore" che modifica essenza e parametri dei processi che si osservano.

Così è accaduto per Lev S. Vygotskij, ad opera del quale la situazione sperimentale in psicologia cambia sostanzialmente, in quanto viene messo a fuoco *il soggetto dell'azione*, il *partecipante* della situazione e tutto si modifica, si media attraverso l'interazione tra i partecipanti. Questa caratteristica addizionale dell'ambiente, con riferimento al principio della fisica della "addizionalità" è oggetto della ricerca in quel lavoro che avevo compiuto per la fisica.

Stavo attuando il tentativo di considerare le idee di Bohr e di Einstein per capire come e con quali strumenti essi descrivono le situazioni in casi di addizionalità e di compararla con il ruolo dei segni e simboli nella descrizione di quei segni e simboli caratterizzanti la realtà della conoscenza in psicologia. Il ruolo di segni e simboli, ossia degli strumenti culturali nell'analisi del verificarsi e della descrizione dei processi psichici era ciò che sostanzialmente mi interessava. La riflessione sullo stato della realtà fisica, su come la pensano i teoretici e le persone che creano teorie nella fisica, era per me il fondamento per affrontare la formazione dei processi che mi interessavano.

Mi sono immerso profondamente nell'analisi della storia della fisica perché desideravo capire come si svolge il pensiero dei fisici stessi. Quando ho cominciato a capire che un salto di qualità si è verificato, in fisica, con la formulazione della teoria della relatività, con la meccanica quantistica, nel cui sistema di concetti l'*addizionalità* dei processi è condizionata dalla posizione dell'osservatore, mi sono concentrato sul problema di ciò che l'osservatore cambia all'interno della situazione. Mi si fece evidente il fatto che la psicologia delle interazioni e della compartecipazione devono diventare il centro di una specifica indagine.

Così la via per la psicologia della formazione dei concetti era aperta.

Io cercavo di "afferrare", rendermi consapevole dell'infinità del visibile… In un certo senso cercavo di ragionare, se vuoi, come Kant. Mi buttavo nel campo della conoscenza filosofica. Allora inaspettatamente ho capito che questi schemi e descrizioni teoriche dipendono strettamente dalle proprietà del pensiero. Ossia la realtà rappresentativa dipende profondamente dagli strumenti con cui la descriviamo. In quel momento ho deciso in modo definitivo che

dovevo lasciare la fisica e passare ad un'altra scienza, nella quale si studia la natura del pensiero.

C'erano allora da noi presso il MIFI (*Moskovskij Institut Fisiki*) un gruppo di 24 persone, tutti uomini. Molti di loro oggi dirigono ancora Centri di rilievo, alcuni non ci sono più. Era una compagnia molto unita. La vita in tale gruppo ha costituito una tappa importante della mia biografia professionale e la ricordo affettuosamente. Anche oggi vado spesso in questo istituto. Quando il suo attuale Direttore, Striganov mi dice "Vieni nel mio studio", entrando gli dico "Io, Mihail Nikolaevič, non vengo qui per la prima volta, anche Kirillov-Ugrjumov mi chiamava presso di sè." Era colui che aveva diretto a lungo la Commissione per la validazione della Ricerca Scientifica (VAK) presso il Ministero. Nel momento in cui stavo per mettere a fuoco i processi di cui mi interessavo, ho avuto fortuna, la grande fortuna di un incontro con Evald Vasil'evič Il'enkov. Certo lo ricorderai, era un famoso filosofo, un vero cervello, acuto pensatore. Allora era il mio interlocutore.

Kudrjavzev – Scusa, ma come sei arrivato a Il'enkov?

Rubzov − Me lo ha presentato sua figlia Lena, all'epoca molto amica di mia moglie Nina. Evald Vasil'evič mi invitò a casa sua sulla Prospettiva del Teatro [2]. Ascoltando i temi dei miei scritti mi disse: "Sai che ti dico, ti voglio presentare Vasilij Davydov e Felix Mihailov". Da quel momento sono iniziati amicizia e rapporti con queste due persone eccezionali.

Ero allora al mio quarto anno di studi universitari. Davydov mi disse: "Non capisco tutto di quello che mi dici, ma io mi occupo di questo: è necessario costruire i programmi scientifici di diverse discipline per bambini, in modo che in essi si possa formare il pensiero scientifico. Per esempio su questioni della fisica. Questo potrebbe essere compito tuo. Tu conosci il pensiero teorico dei fisici?" Io rispondo "So solo che quando cambia l'osservatore cambia l'intero quadro del modo di pensare l'esperimento, si crea un nuovo sistema di concetti che descrivono un oggetto fisico complesso".

"Ecco è proprio questo – disse Davydov – mi serve che proprio i bambini possano apprendere i concetti teorici con modelli speciali in

[2] *Teatral'nyj Proezd*. Tuttoggi nel centro di Mosca.

un aspetto generale, e capire, sulla base di questi, la sostanza degli eventi fisici e risolvere problemi pratici concreti di questo o quell'aspetto della fisica. In quel caso noi potremo dire che sono formati in loro i fondamenti del pensiero teorico in base a materiali della fisica".

Kudrjavzev – A proposito, scusa, ma nella fisica teorica esiste un altro tipo di pensiero?

Rubzov − Bella domanda. Il fatto è che questo pensiero teorico è sempre empirico. Il fisico esegue sempre un esperimento particolare di pensiero che gli permette di capire il principio generale degli eventi che si verificano. Ma questo è oggetto di una questione particolare e di un dibattito particolare con Davydov, il quale mi diede i lavori di Henrietta Glebovna Mikulina che, in quell'epoca, studiava nel suo Laboratorio la formazione dei concetti matematici nei bambini della scuola primaria.

Ecco io mi occupai di questo argomento fino al momento in cui andai da Davydov e gli dissi: "Mi interessa. Posso preparare un Corso sperimentale che può diventare la base per la formazione dei concetti teorici della fisica nei bambini". Mi rispose "Se lo fai allora ti prendo a lavorare qui con me". A quell'epoca egli dirigeva il "Laboratorio di Psicologia della prima età scolare" presso l'Istituto di psicologia e organizzò il mio distaccamento speciale dal MIFI presso tale istituto.

La pratica fu sottoscritta dal Presidente della Accademia delle Scienze Pedagogiche dell'URSS Zubov, al quale Davydov aveva detto "Viktor Gennadevič, questo ragazzo del MIFI ha promesso di prepararmi la fisica di cui ho bisogno". Zubov era un famoso fisico egli stesso, autore di uno splendido manuale di esercizi e problemi di fisica per preparare l'accesso agli istituti superiori.

A firma sua fu indirizzata la domanda di distaccamento, in un certo senso storica, al MIFI, rivolta a Kirillov-Ugrjumov. [3] In questa, nero su bianco era scritto: "A seguito della elevata esigenza di quadri

[3] Kirillov-Ugrjumov Viktor Georgevič (Mosca,1924-2007) rettore del MIFI dal 1970 al 1974, ingegnere e fisico atomico - sperimentale. Decorato al valor militare, fu presidente della Conferenza Federale dei Rettori e membro del VAK, la commissione governativa per l'attestazione scientifica.

qualificati, capaci di lavorare sul sistema dell'istruzione, l'Accademia delle Scienze Pedagogiche dell'URSS fa domanda al MIFI di destinare al sistema dell'Istruzione dieci persone e Vitaly Vladimirovič Rubzov". C'era scritto proprio cosí: "*dieci* persone *e* Vitaly Vladimirovič Rubzov". Kirillov-Ugrjumov lesse e mandò in esecuzione la richiesta.

Si verificò una scena improbabile. La distribuzione: studenti del nostro gruppo in attesa; si leggono i cognomi: uno va al tale Centro, l'altro nel tal altro. Mi avevano avvertito che un rappresentante del datore di lavoro doveva assistere assolutamente alla destinazione.

Davydov, comprendendo l'importanza del momento mi disse: "Vitaly, tu sta fermo all'ingresso con il lasciapassare in mano, poi arrivo io".

Si sentono i nomi: Perfilev, Pokrovskij, in ordine alfabetico, io siedo, poi Rebrov… Rubzov. Davydov non c'è, sta tardando. Passa Perfilev, passa Pokrovskij e Davydov non c'è. Arriva correndo al nome Rebrov. Mi chiamano. Al sentire il mio nome Davydov interviene: "Questo lo prendo io. Lui lo prendo io" (come se gli altri 10 non esistessero).

Kirillov-Ugrjumov lo guarda e dice: "Prendetevelo e portatevelo. Ma non abbiamo altre dieci persone."

Poi rivolto a me fa: "Ma vuole davvero andare lì? Si rende conto di quello che sta concordando in questo momento?".

E io per tutta risposta: "Sì, lo capisco. Voglio occuparmi della formazione del pensiero nei bambini".

Il mio gruppo era scioccato da quanto stava accadendo. Inizia la lettera S, tutto prosegue. Certo la situazione incredibile fu che io fossi destinato all'Istituto di Psicologia. Nell'istituto allora all'ufficio personale era dirigente Sofija Nikolaevna Timofeeva, la quale lesse l'ordinanza e mi chiese "Ma è sicuro di esser venuto nel posto giusto?" E io: "Si, perché?" "Vede, da quell'Istituto non distaccano mai nessuno presso di noi."

Per farla breve, nel modo più surreale, divenni ricercatore nel Laboratorio di Davydov.

Cominciò così la nostra collaborazione nella ricerca scientifica. Adesso capisco l'importanza vitale che quell'evento ha avuto nella mia vita. Ha influenzato la mia formazione come specialista nell'ambito della teoria e della pratica dell'attività didattica e, più

estesamente, nel campo della psicologia evolutiva e pedagogica; indubbiamente, è divenuto biglietto d'ingresso per la prospettiva scientifica che ho fondato come ricercatore. L'Istituto di Psicologia è divenuto poi luogo della mia crescita professionale e in questo centro meraviglioso di scienza e formazione d'eccellenza del mio Paese ho percorso la via da giovane ricercatore a direttore dell'Istituto stesso.

Vasily Vasil'evič (Davydov) mi assegnò il problema scientifico di come si formano, con l'esempio della fisica, i concetti teorici negli adolescenti. Le caratteristiche di questa formazione l'attribuiva fin da allora all'attività congiunta [4] e pertanto istituí un gruppo di ricercatori, Polujanova, Matis, Kravzov, Rubzov per lo studio delle azioni congiunte dei bambini nel corso dell'istruzione.

Kudrjavzev – Ma questa idea è venuta fuori da sé nell'immediato?

Rubzov − No certamente. Il fatto è che Vasily Davydov da una parte si basava sulla periodizzazione dello sviluppo di Danijl El'konin per il quale la condivisione bambini-adulti era la condizione per l'avvio dello sviluppo infantile, dall'altra per me quest'idea si era posta fin dal primo momento. Pertanto, come ho già detto, per me la linea osservatore/sperimentatore era principio fondamentale per la fisica teorica. Io prendevo l'avvio in particolare dal fatto che *generale* e *particolare* nei punti di vista dei partecipanti alla situazione sperimentale, la loro interazione, la comprensione reciproca e il dialogo era l'inizio per la conoscenza della situazione nell'esperimento di fisica. Nella mia dissertazione scientifica avevo effettuato un esperimento in cui 4 partecipanti costruivano, con quattro punti luminosi, una sfera incognita immaginata, in una camera oscura. Come generare il movimento insieme, come accordarsi sulla coordinazione delle azioni individuali e costruire un "movimento come forma generale dello spazio". Dar risposta a questo problema senza un sistema di concetti della cinematica era impossibile. In seguito, questo fu realizzato concretamente nelle dissertazioni di Guzman, Krizkov e Ageev, dedicati allo studio della formazione dei concetti della cinematica nei bambini. In tali lavori si

[4] *Sovmestnaja dejatel'nost'*, modalità didattica di affrontare problemi e risolverli in collettivi di piccoli gruppi con precise mansioni, che vengono svolte a rotazione da tutti i componenti.

dimostra che nell'azione congiunta si viene a disporre una situazione in cui la diversità dei punti di vista riguardo all'oggetto in esame porta i partecipanti all'azione congiunta, all'esigenza di giudicare, ragionare e ricercare in merito al contenuto dell'oggetto.

Nella cornice di una tale comunicazione sorge l'opinione concordata che poi comporta l'origine dei concetti corrispondenti. Per me, sia nella fisica che in psicologia (in questo profondamente d'accordo con Davydov) non esiste conoscenza già pronta. Il bambino deve capire come sorge la conoscenza. Cioè se vuoi portare i bambini al contenuto del concetto essi devono scoprire da soli, nel concetto, il rapporto che definisce quella pluralità dei fenomeni con quelle determinate caratteristiche. In seguito sul fondamento di tali indagini io sono passato allo studio del verificarsi e del superamento da parte dei bambini, del "fenomeno Piaget". In questo esperimento psicologico, per me basilare, a un gruppo di bambini fu posto il problema della ricerca del contenuto dello stesso fenomeno. La soluzione del problema da parte dei bambini si basava sulla elaborazione di un punto di vista comune tra loro in merito alla modalità di interazione, che rendeva possibile la soluzione del problema.

Va detto che con queste sperimentazioni da me fu posto l'inizio per la costruzione di una variante e, in sostanza, di un nuovo modello del metodo di modellazione genetica. La sua essenza consisteva in ciò che nelle condizioni di impossibilità di adoperare le conoscenze già possedute per la soluzione del problema (per esempio nelle condizioni di una limitazione di operare con le proprietà concrete degli oggetti), i partecipanti, insieme, identificano come oggetto di uno studio speciale la possibilità stessa e il modo per interagire l'un con l'altro: in modo analogo con il percorso della doppia stimolazione di Vygotskij, nel percorso si trovano due serie di stimoli delle proprietà degli oggetti ed è indispensabile scoprire il significato di una parola senza senso, che predispone la connessione di tali proprietà, nel nostro caso nel percorso inverso (*protivohod*), si trova il metodo dato dall'adulto per accertare il nesso delle azioni e le corrispondenti proprietà oggettuali. La comprensione e l'intendimento reciproco dei fondamenti delle divergenze che sorgono è il percorso della ricerca, da parte dei partecipanti, di nuove

modalità di connessione che rendono possibile la trasformazione delle limitazioni reali.

I dati danno evidenza del fatto che la ricerca di un nuovo modo di interazione fra i partecipanti è già la situazione dell'insorgere di una forma di classificazione di tipo nuovo. Già nella loro cornice si apre per il bambino il senso inizialmente latente per la soluzione del problema – nel nostro caso il noto fenomeno (v. Piaget) determinato dall'incomprensione del rapporto di inclusione nelle classi.

E adesso forse viene il momento più difficile, decisivo per il metodo da noi elaborato. Lavorando con il problema della dinamica formativa dell'attività didattica dei bambini della prima età scolare, Davydov, per quanto possa sembrare inaspettato a prima vista, spostava in secondo piano il problema del rapporto della condivisione del bambino con l'adulto e dei bambini tra loro. Questo dava adito ad alcuni colleghi di affermare che egli neppure prendesse in considerazione la compartecipazione nell'attività didattica come una condizione per lo sviluppo infantile. Ma un simile punto di vista può presentarsi solo in chi non abbia compreso fino in fondo la forza e il significato del lavoro di V.V. Davydov.

Proprio Davydov, passando in esame i problemi insoluti in Vygotskij, rilevava il nesso interiore profondo della psicologia storico-culturale e della teoria dell'attività. E lo spiegava in termini per cui lo sviluppo, che viene considerato da Vygotskij attraverso la modificazione della situazione sociale, è comparabile con lo sviluppo dell'attività. Ecco perché lo sviluppo dell'attività scolastica per Davydov, fondamentalmente, è sempre la modificazione di una situazione sociale – il passaggio da chi gioca a chi studia. Noi lo abbiamo preso in esame specificamente quando abbiamo effettuato l'analisi delle mie sperimentazioni. L'evolversi dell'attività scolastica, che porta allo sviluppo dei concetti teorici nei bambini, è senza dubbio lo sviluppo della comunanza adulto/bambino. La modificazione, la trasformazione del tipo della condivisione "bambino/adulto", la formazione di una nuova modalità di condivisione scolastica specifica è sempre una condivisione didattica "bambino/adulto" – "docente/discente" (gruppo di discenti). Senza tale comunanza è impossibile la generalizzazione e viceversa.

Kudrjavzev – Vitaly, parlaci per favore del ruolo che ha avuto Danijl Borisovič El'konin in questo accostamento tra comunanza e

generalizzazione, dato che come diretto e preferito collaboratore di Vygotskij egli conosceva il significato di tale principio dell'unità di comunanza e generalizzazione. Egli comprendeva alla perfezione che persino nella psicologia in voga negli anni tra il 1940 e il 1950 a questo si dava un valore di sfondo. Quali posizioni sosteneva nei meeting e nei dibattiti in merito, dato che ne sei stato testimone?

Rubzov − È vero, si tratta di un tema fondamentale e mi rammarico che non ci sia più lui per poterne parlare insieme. Egli poneva al primo posto la condivisione ed era in questo senso un continuatore diretto di Vygotskij, che considerava il principio dello sviluppo in connessione, dall'inizio alla fine, con il concetto di "modificazione della situazione sociale" collocandolo a fondamento della sua delineazione dei periodi dello sviluppo. Le contraddizioni storico-sociali determinano il vettore dell'avvicendamento dei periodi nell'infanzia.

Non ammetteva l'affermazione che qualcuno insegnasse o sapesse insegnare ai bambini a studiare. Per lui si trattava di un sistema complesso di attività scolastiche specificamente organizzate, in cui il possesso del contenuto dei concetti scientifici veniva predisposto dall'assimilazione del contenuto di modalità organizzate di soluzione di classi di problemi, dall'apprendimento di modalità generalizzate di azione, fondato su una generalizzazione teorica.

Kudrjavzev – In genere si tratta di una dotazione o di una competenza? […]

Rubzov − Davydov in sostanza rispondeva che era qualcosa di questo genere. Dal suo punto di vista si trattava di una capacità. La capacità di collocare un oggetto o una situazione in condizioni tali, in cui possano essere trasformati per individuare un qualche rapporto essenziale che li definisce. Ma prova a fare una tale collocazione. In questo sta la capacità. Arriva un "qualsiasi" Heisenberg e lo fa. Accanto siede chi per tutta la vita tenta di farlo e non ci riesce. È una dotazione o una capacità?

Kudrjavzev – È una dotazione, certo, senza alcun dubbio.

Rubzov − È una capacità. Ma su questo si può discutere all'infinito.

Posso citare ricerche estremamente interessanti fatte a suo tempo da Davydov. Stava studiando lo sviluppo del pensiero in bambini in attività scolastiche diverse e in bambini dotati in matematica che

studiavano in scuole speciali. Si accertò che non ci sono differenze di sorta nella comprensione del contenuto di concetti matematici. Altra cosa è lo sviluppo individuale di tali bambini. È già un'altra sfera. Tali dati sono stati confermati dalle ricerche di I.M. Ulanovskaya.

Kudrjavzev – Il dramma della dotazione e lo sviluppo dell'attività di studio sono, a mio parere, strettamente collegati. Le radici dell'una si devono cercare nell'altra.

Rubzov − Certo che sono collegate. In ogni caso la dotazione non è, secondo me, un fattore genetico e neppure un sistema di geni. È in generale il problema del rapporto tra dotazione e creatività, ma sono cose vicine. Dirò soltanto che Davydov, scoprendo la situazione della genesi dei concetti nell'infanzia, ha dimostrato che l'uomo che possiede un concetto capisce come esso si è formato ed è un uomo capace di risolvere un problema e di muoversi in una situazione di indeterminatezza. Cerca e costruisce gli strumenti che lo aiutano a cambiare queste situazioni, a cambiarle oppure a non incappare in queste. Ricordi la definizione del pensiero in Spinoza? "La capacità di un corpo di muoversi in base alla forma di un altro corpo". Non conosco definizione migliore. È la capacità sorprendente di muoversi in condizioni di indeterminatezza – "in base alla forma di un altro corpo, comprendendo e predefinendo la sua struttura".

Kudrjavzev – In Kant c'era lo schematismo rappresentativo, *Critica della ragion pura*.

Rubzov − E tu dici che la creatività non è connessa con la dotazione.

Kudrjavzev – Affermo esattamente il contrario.

Rubzov − Continuando sul tema di partenza, la dissertazione fu discussa. I risultati dimostrarono che condivisione e generalizzazione sono strettamente connesse fra loro. Davydov arrivò a dire: "Vitaly tu hai posto il problema di ciò che accade con l'attività scolastica. Il bambino scopre non solo il modo di lavorare con il concetto, ma anche la visione dell'adulto. La nuova comunanza sorge nel bambino con l'insegnante in una situazione non generale, ma basata sulla ricerca del contenuto del concetto".

Alla luce di tali dati Davydov cominciò a considerare diversamente non soltanto la scuola primaria, ma anche la scuola di base e quella superiore. E insieme con Boris El'konin cominciarono le ricerche connesse con la scuola in quanto spazio di sperimentazione e

di prova. Ti chiederai perché questo funziona? Perché proprio il condividere il contenuto orientato sulla possibilità dei bambini stessi tutti insieme di porre e risolvere il problema, diventa la chiave per la costruzione dell'apprendimento in questa età.

Indubbiamente Davydov ci ha lasciato non pochi problemi. Ma il nesso tra generalizzazione e condivisione era per lui importante in via di principio. C'è ancora un momento importante per la comprensione di ciò che facciamo. Hai presente la critica di Davydov a Vygotskij a proposito di generalizzazione e apprendimento? È scritta accuratamente e riformulata una decina di volte.

Kudrjavzev – Direi severa a tutti gli effetti.

Rubzov − Lo è per coloro che la leggono comprendendo Davydov. Egli dice: "Secondo Lev Semenovič la condivisione si separa sostanzialmente dalla generalizzazione. La condivisione non è riferita oggettivamente alla situazione in cui si trovano i soggetti che agiscono". Per Davydov, come comprenderai, questo è un punto fondamentale. Mi diceva: "Se fai questa separazione, presto ci predicheranno come esempio della cucina la condivisione dei contenuti delle casalinghe in cucina" ed era contrario a questo in via di principio. "Fatemi vedere i limiti e le possibilità illimitate delle comunanze scolastiche. Quando le persone studiano, parlate di capacità di studiare. Adesso hanno appreso tutti la capacità di studiare. Ridicolo".

La condivisione scolastica si ha quando l'oggetto della ricerca diventa il contenuto dell'oggetto o della situazione; quella generalizzazione universale che ha il carattere di iniziazione genetica. Ciò che scopre il molteplice delle manifestazioni concrete. Ciò che diviene simbolo, o come diceva Aleksej Fedorovič Losev "modello generativo della realtà". In che cosa si ha questo e come sono giunti ai modelli generativi? Di che competenza parliamo quando ci riferiamo a "capacità di studiare"? Così Davydov. Come la insegniamo? Chi di noi è effettivamente capace di insegnare? Davydov stesso ha dato una risposta non solo teoricamente ma anche sul versante dell'applicazione pratica a tale interrogativo: in che cosa consiste la capacità di insegnare.

Kudrjavzev – Si riferiva già al concetto di competenza? In quale anno dei '90 scriveva? In occidente si era diffuso prima.

Rubzov − Il fatto è che il concetto di competenza non è in proposito privo di senso. Si riferisce alla connessione reciproca tra la modalità dell'azione e la conoscenza che la sottende. Certo presuppone una considerazione ulteriore, in quanto è un problema particolare. Ma il nesso tra comune e generale, che è stato risultato delle mie elaborazioni a proposito della formulazione del contenuto dei concetti teorici in base a contenuti della fisica, è stato un risultato scientifico non solo mio, ma dell'intero laboratorio di Davydov. A questo siamo pervenuti insieme. Sul concetto in esame ha lavorato Galina Anatol'evna Zuckermann, Jurij Aleksandrovič Polujanov che studiava l'introduzione dei bambini alla creatività artistica attraverso la situazione "pittore – spettatore". Secondo me l'assimilazione del contenuto dei concetti della fisica da parte dei bambini si fonda sulla costruzione di nuove modalità di azione degli stessi partecipanti ed è orientata alla ricerca della contraddizione oggettiva. Tale comunanza definisce lo scenario di un'azione nuova e crea il mezzo per la soluzione del problema.

Kudrjavzev – Siamo ritornati al punto iniziale del nostro discorso. Cioè tutto si era non riformulato quasi fatalmente sul piano pre-psicologico della tua vita, in quanto la fisica è per sua natura "multiocchiuta". Non si tratta solo di diverse scene fisiche ma di una gran quantità di teorie. E tu ti occupavi oggettivamente della connessione tra queste posizioni.

Rubzov − Sì, mi occupavo di storia della fisica per capire il principio della complementarietà e come interagisse tra partecipanti contrapposti della situazione sperimentale.

Kudrjavzev – Allora passiamo al punto successivo del nostro tema. Si tratta di un momento molto importante. Nel 1976 giunge nell'Istituto di Psicologia Vladimir Solomonovič Bibler e crea contemporaneamente un suo gruppo nel laboratorio di Mihailov, nostro professore e famoso filosofo e psicologo russo. Componente importante del gruppo era indubbiamente Il'enkov. Di una stessa generazione, si trattava di una comunità filosofica. Il riferimento alla filosofia era in quel momento molto importante per Davydov. In sostanza in Vygotskij il tema del rapporto comune − generale restava un colpo d'occhio psicologico. Inoltre, il concetto di comune ai tempi di Vygotskij era alquanto diverso da ciò che rappresenta oggi. E Bibler nel 1975 pubblica il suo lavoro "Il pensiero come creazione", in

cui prende in esame il dialogo, sottolineo, non come forma di discorso su temi di pensiero, su temi del contenuto dell'essenza, ma in quanto forma specifica di pensiero.

In via di principio non faceva nulla di diverso in confronto a Platone o a Niccolò Cusano, ma lo ricomponeva in un quadro assolutamente sorprendente. Tu sei stato testimone di queste dispute che avvenivano nel leggendario Istituto di Psicologia, l'Istituto di Psicologia generale e pedagogica dell'Accademia delle scienze pedagogiche della Russia. Quanto pensi che abbiano influito i dialoghi con Bibler sullo sviluppo della concezione di Davydov della generalizzazione? (compartecipazione, *sovmestnost'*). Inoltre, tieni presente che c'erano dei precedenti e mi riferisco al libro "Analisi del divenire del concetto" (di Kedrov, Arsen'ev, Bibler). Era il 1964 e Davydov era all'epoca redattore scientifico presso la casa editrice. Riconosci questa influenza? In proposito Bibler ha compiuto il 4 giugno 100 anni.

Rubzov − Stai in questo momento evocando una svolta storicamente importante, che si riferisce a ciò che si elaborava in merito alla filosofia e logica della genesi dei concetti in riferimento alla teoria della formazione dei concetti. Tale problema verosimilmente interessava profondamente a Davydov e ai suoi allievi e sostenitori. Non soltanto guardavamo a tutti questi pensatori, ma li ascoltavamo e cercavamo di capire. Non ho mancato un solo seminario di Vladimir Solomonovič Bibler.

Con Arsen'ev e Mihailov ero in continui rapporti. Con loro ho sostenuto l'esame del Phd in filosofia. Quale era il punto di contatto tra Davydov e Bibler? Davydov comprendeva perfettamente che la compartecipazione (*sovmestnost'*) e sostanzialmente parlando la condivisione (*obščenie*), erano processi interiormente collegati fra loro, erano meccanismi e strutture che definivano la generalizzazione e l'origine dei concetti. Bibler aveva posto la forma stessa della condivisione, proprio il dialogo, a fondamento della genesi dei concetti. Egli affermava "La diversità posturale dei partecipanti del dialogo è la forma di partenza nella quale è possibile l'origine e lo sviluppo del concetto". In questo senso si distaccava dalla situazione oggettuale. Ma era un punto rovente questo, delle loro discussioni teoretiche. Secondo Davydov l'oggettività e il contenuto del concetto erano sempre definitori nella genesi dei concetti e in connessione con

questo formulava la sua domanda principale: in che modo il dialogo (quale forma di dialogo) incita l'uomo (il bambino) alla scoperta del contenuto dei concetti? Come si scopre il contenuto del rapporto originario nell'interazione tra adulto e bambino?

Kudrjavzev – In Bibler c'è proprio l'espressione "punto di dibattito".

Rubzov − Davydov su questo punto non soprassedeva e non mollava. Diceva "Non faccio obiezioni contro il dialogo come forma originaria. Ma nel dialogo può capitarci l'oggetto, mentre il discorso rimane tale". Non puoi trattenere un oggetto se proprio questo oggetto non si trova nel punto della disputa. Non mi dilungherò, ma mi permetto di dirla in questi termini: in un certo grado, nelle mie ricerche ho dimostrato come sono connesse le forme della condivisione con gli aspetti della generalizzazione. I tipi di situazioni sperimentali descritti da me corrispondono sostanzialmente agli aspetti della generalizzazione e caratterizzano determinati tipi di comunalità. Ma gli aspetti della condivisione si differenziano per forma. Il dialogo scientifico si differenzia da qualsiasi altro per l'orientamento sul contenuto dell'oggetto. Tutto dipende da come i partecipanti si muovono rispetto al contenuto dell'oggetto. È una ricerca del contenuto attraverso l'organizzazione della forma stessa dell'interazione o del giudizio in merito a…

In Bibler queste sono congiunte, mentre Davydov lo poneva in discussione seppure non avesse previamente definito quali aspetti di generalizzazione divengano tipi perfettamente definiti di condivisione e di comunanza. Per Davydov si trattava di una biforcazione, che risolveva cosí: "Per me è più di tutto importante il contenuto oggettivo e il tipo di dialogo che sottendono. Sono persino d'accordo sul fatto che il dialogo sotto questo aspetto sia una forma definita di condivisione e di generalizzazione. Il tipo della generalizzazione definisce se il dialogo sia scientifico o meno." In questo consisteva sostanzialmente la differenza centrale delle loro idee.

[…]

Kudrjavzev – Da ora in poi parleremo solo di te. Capisco che ci saranno continue interruzioni ma tu non sei Diogene nella botte. Il tuo libro del 1996 "Fondamenti della psicologia socio-genetica" non è soltanto il tentativo di considerare lo sviluppo psicologico nel senso

tradizionale della psicologia sociale e pedagogica. È qualcosa di diverso. E non è neppure un proseguire la linea della ricerca americana riferentesi alla teoria dell'apprendimento sociale di Albert Bandura, peraltro anche forte a sua volta. Vi si introduce un concetto affatto nuovo importante in via di principio, della "sociogenesi dell'azione condivisa". Parla per favore del senso di questo concetto – per ora a proposito dell'azione. Esso modifica radicalmente la psicologia storico-culturale e pone in chiave problematica una serie di concetti che eravamo abituati a considerare nella sfera della psicologia storico-culturale e della psicologia dell'Attività.

Rubzov – Bisogna dire che era già una conclusione definita del mio lavoro per la dissertazione scientifica, quando mi occupavo seriamente dei problemi della genesi delle azioni conoscitive e apprenditive (*učebnopoznavatel'nye dejstvija*) nei bambini nelle condizioni dell'attività predisposta per la compartecipazione (*sovmestno-raspredeljonnaja dejatel'nost'*). Le ricerche che ho portato avanti hanno dimostrato che l'azione per la ricerca del contenuto dell'oggetto o della situazione sorge innanzitutto in risultato dello scontro tra diversi punti di vista, nelle condizioni in cui si devono coordinare diverse modalità di azione riferentisi all'oggetto dato. Inoltre, si comprese che la situazione stessa delle interazioni (*vzaimodejstvij*) nell'attività compartecipata (*sovmestnaja dejatel'nost'*) diviene in condizioni determinate origine del generarsi di una azione nuova. Il generarsi dell'azione teoretico-conoscitiva (*učebnopoznavatel'nogo dejstvija)* nelle interazioni tra i partecipanti all'attività congiunta, basata sulla ricerca dell'oggetto dell'obiettivo attraverso la costruzione di nuove modalità dell'interazione, è stata definita come sociogenesi dell'azione teoretico-conoscitiva (*učebnopoznavatel'nogo dejstvija*). I fondamenti della psicologia sociogenetica sono le esigenze e le condizioni che di fatto determinano l'origine dell'azione teoretico-conoscitiva (*učebnopoznavatel'nogo dejstvija*) dalla situazione delle interazioni sociali (*vzaimodejstvij*) e delle relazioni reciproche (*vzajmootnošenij*) tra i partecipanti.

Che cosa era importante per me nel concetto di "sociogenesi"? La derivazione dell'azione riferita all'oggetto nella condizione di un mutamento della situazione sociale. Questo concetto collegava, a mio parere, la condivisione (*obščenie*) e la compartecipazione (*obščnost'*) in

un'azione condivisa e, dall'altra parte, la stessa azione, la sua referenzialità oggettiva rivolta al contenuto dell'oggetto. Se adesso prendiamo e apriamo il libro "Fondamenti della psicologia socio-genetica", che tu hai menzionato, troviamo che le situazioni oggettive descritte in esso sono costruite in modo tale che la contraddizione oggettiva diviene per i partecipanti condizione per la ristrutturazione e, in sintesi, per la costruzione della stessa compartecipazione. Avevo progettato accuratamente questi esperimenti. Bisognava in effetti trasformare l'oggettività nella compartecipazione.

Tali interscambi, sostanzialmente parlando, divenivano oggetto di analisi per gli stessi bambini. In conseguenza di ciò si presentavano collisioni tali, situazioni tali in cui la limitazione delle interazioni reciproche veniva considerata dai componenti come la premessa per la costruzione di una nuova forma di compartecipazione. Quest'ultima veniva considerata da loro come un obiettivo specifico per la ricerca del contenuto dell'oggetto. Con questo era importante la nuova azione che si originava "connessa" con la comprensione dell'azione dell'adulto in quanto autore del compito e con una interazione reciproca costruttiva con lui. Io lo faccio rilevare con l'espressione "l'adulto, il bambino e il generarsi della comunanza"; l'adulto e il bambino come Comune, come costrutto socio-psicologico, propriamente una compartecipazione "bambini – adulto" che si evolve e vive rendendo attuale il funzionamento delle funzioni psicologiche. In una tale compartecipazione l'adulto non è più colui che detta le regole del comportamento e dell'azione. Le regole si presentano e si valutano nella comunanza, nella ricerca congiunta della trasformazione dell'oggetto. Una conclusione è molto importante; se volete far apprendere qualcosa al bambino, predisponete situazioni in cui ci siano le premesse per la trasformazione delle modalità dell'interazione tra adulto e bambini e tra bambini stessi, create le condizioni per la formazione della comunanza basata sull'azione congiunta. È difficile? Sì, lo è. Ma se non lo si fa non si ottiene di fare ciò di cui parlava sostanzialmente Vasilij Vasil'evič, è possibile insegnare ad apprendere solo quando l'uomo rende obiettivo specifico per l'altro la ricerca del contenuto di questo o quell'oggetto o situazione.

Quando mette l'altro in una situazione tale da far comprendere quale sia questo (contenuto), allora si cala nel libro di testo, si

immerge nel sistema informativo – cerca la soluzione che gli è necessario trovare. Quali sono le condizioni della sociogenesi? Posso elencarle, ma chiunque può trovarle leggendo i miei lavori. È l'organizzazione delle azioni congiunte, basata sulla loro disposizione e l'interscambio tra i partecipanti, sono i processi della comunicazione, della comprensione reciproca, della riflessione. Senza tali processi non è possibile il superamento dei limiti all'interno della comunanza che si sta creando; si tratta della ricerca degli strumenti volti alla costruzione di una nuova modalità di interazione.

Tuttavia, l'interrogativo resta lo stesso: ma la situazione sociale determina lo sviluppo dei bambini, per esempio nella prima età scolare? Io dico "Sì". E mediante che cosa? Mediante il fatto che formeremo specificamente nei bambini la capacità di apprendere. Lo stiamo facendo questo adesso? Non nella entità dovuta, perché l'organizzazione dell'attività didattica come esperienza comune, volta alla ricerca congiunta della soluzione di problemi, non è un processo sistematico nella scuola primaria e non soltanto nella primaria. E dico questo perché, se lo fosse, allora il contenuto delle discipline scolastiche sarebbe costruito in base al tipo dell'attività didattica. Non abbiamo un contenuto di questo genere, ma tuttavia ci sono insegnanti che cercano queste forme nella pratica, tutelano tipo e stile dell'attività didattica e costatiamo che in queste classi i bambini fanno un reale avanzamento nello sviluppo. Ricordate il momento in cui Davydov e El'konin, all'inizio degli anni '70, intrapresero il dibattito sulla priorità dello sviluppo nei confronti delle forme tradizionali dell'istruzione? Essi affermavano "Il bambino può fare molto di più di quanto la scuola attuale gli propone". Adesso i nostri oppositori dicono "Il bambino può fare molto e noi possiamo offrirglielo. Prendi, bambino, tutto questo".

Ma questo bambino apprende questo tutto? "No". E il problema non è che egli possieda o meno la capacità di assimilare una maggior quantità di materiale. Chi sì – chi no. Ma ecco, questa capacità determinante in base alla quale egli possa apprendere nuove conoscenze e inserirsi in nuove attività, in lui noi non la formiamo. E se non fosse così vorrei averne delle dimostrazioni precise.

Kudrjavzev – Completamente d'accordo con te, Vitaly. Ma allora giungiamo con te, in parole povere, in una situazione strana. Accade che letteralmente il 90 % delle istituzioni preposte a fornire una

istruzione generale e media, proprio questa istruzione generale e media non danno. La parola istruzione è determinante.

Rubzov – Ecco su questo io non sarei d'accordo. Forniscono una istruzione nella misura rispondente alle esigenze che esse stesse definiscono. Noi adesso parliamo d'altro. Per me è affatto evidente che per l'uomo che lavora in una definita tradizione scientifica e culturale quello che io definisco attività didattica ha suoi sensi e significato. Nell'ambito di tale tradizione no. E in merito a ciò che si attua in quell'ambito io sono critico.

Io dico "No" perché non date al bambino le competenze chiave e non formate in lui le capacità chiave (la parola capacità mi è più congeniale) che consentano al bambino innanzitutto di agire con oggetti e situazioni in modo tale da assimilare il contenuto dei concetti corrispondenti e in secondo luogo da assimilare la capacità di interagire scambievolmente con gli altri, senza le quali non è possibile inserirsi in nuove forme di attività comuni condivise [5] (*общность, obščnost*).

Kudrjavzev – Si dice: non c'è interesse nei confronti dello studio. Non nei confronti dello studio ma nei confronti di se stessi. Tu sei una consuetudinarietà vagante. Accanto a te vagano altrettante consuetudinarietà, grandi e piccole, che riproducono sempre una stessa cosa. Tu non costruisci, ma puoi modificarti solo nell'ambito di una nuova comunalità [6] (*общность, obščnost*) che tu stesso devi instaurare con gli adulti.

Rubzov – La nostra recente discussione dedicata al problema della compartecipazione[7] (*sovmestnost'*) ha dimostrato come deve essere la scuola strutturata secondo il tipo dello sviluppo delle comunità e delle attività. Con Arkadij Margolis abbiamo pubblicato un articolo dal titolo "Una scuola di tipo storico-culturale". Questo articolo è molto citato ed è stato pubblicato in molte lingue …

Kudrjavzev – Un articolo che risale al 1994 ...

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[5] Il termine compartecipazione rende la parola russa qui tra parentesi, ma anche altre parole analoghe, come comunalità. Si tratta di un "esserci in modo partecipe" (NdC S.V.)

[6] Vedi nota 5.

[7] Vedi nota 5.

Rubzov − In quell'articolo noi analizzavamo una scuola in quanto sistema di comunità e di attività evolventisi, che contenga la specificità delle forme e dei tipi storici della coscienza e dell'attività. Questo, certo, deve esser sottoposto a dibattito. Deve esser compreso il modo in cui, a questo, fanno corrispondenza le caratteristiche evolutive dei bambini e in quale forma i bambini siano in grado di recepirla. A noi non restano, purtroppo, molte sedi in cui sia possibile sviscerare tale questione in modo esauriente.

Se obiettivi e scopi dell'istruzione si riducono alla quantità di competenze, allora il risultato sarà uno solo: i bambini non apprenderanno ad apprendere. Ma questa è una competenza chiave, una capacità critica senza la cui formazione non si comprende come elevare il capitale umano.

Kudrjavzev – Questo lo vediamo bene noi, nella fascia dell'istruzione superiore.

Rubzov − Certo. Ed è molto spiacevole. E che cosa vediamo in proposito? Nei sistemi stranieri, in Finlandia, nei paesi asiatici, si attua un lavoro dedicato alle forme di istruzione che producano uno sviluppo delle condivisioni e delle attività in bambini e adulti. Che cosa cambia, in particolare? Il passaggio alla sperimentazione nella scuola di base in direzione dell'orientamento professionale, e all'attività progettuale nella scuola media superiore. Il bambino comincia a immergersi, in queste età, nelle diverse forme di attività, cosa estremamente importante ed efficace per lo sviluppo infantile in queste fasce d'età. Ma non avendo loro insegnato ad apprendere nella scuola primaria è molto difficile organizzare una effettiva continuità delle scuole per tipi di comunità e attività in modo adeguato all'età.

Kudrjavzev – L'impulso d'inizio deve essere di carattere pertinente l'istruzione.

Rubzov − Di carattere pertinente l'istruzione in senso lato. Ho l'impressione che la mia risposta non ti abbia sodisfatto.

Kudrjavzev – No, non è questo che penso. A questo punto, però, c'è qualcosa che non posso fare a meno di chiederti. Tra i nostri psicologi nazionali tu sei stato, a metà anni '90, il pioniere nel campo della computerizzazione dell'istruzione. Nel tuo Laboratorio, allora ancora presso l'Istituto di Psicologia generale e pedagogica dell'Accademia delle scienze pedagogiche sono state effettuate

ricerche sorprendenti ed estremamente interessanti che, a mio parere, non solo non hanno perso importanza, ma cominciano appena adesso ad assumerla. E oggi l'istruzione informatica rappresenta un tale massiccio non tanto strumento o mezzo, ma in un certo senso modo di vita, una modalità esistenziale dell'istruzione e della scuola. Come valuti adesso la scena dal punto di vista dell'esperto che la considerava dall'interno e che in gran parte l'ha costruita e progettata?

Rubzov – Ero dell'opinione che il sistema informatico fosse uno strumento dell'attività. Strumento dotato di grandi potenzialità per i contesti orientati alla comunicazione ad uso didattico. Ma era uno strumento non di per sé, ma in quanto inserito nel sistema di un'attività. Cioè tale strumento deve essere inserito nell'attività e devono essere descritte le condizioni nelle quali l'uomo possa assumerlo come strumento per l'organizzazione e l'effettuazione della stessa attività. E questo va costruito.

Inoltre, a suo tempo, nell'eseguire tali esperimenti, eravamo di gran lunga vincitori in quanto alla fine degli anni '80 inizio 1990 c'era un progetto internazionale incredibilmente interessante "Bambini nell'era informatica".

Era il primo progetto Russia − USA sull'interazione di bambini mediante tecnologie di comunicazione informatica. Poi divenne un progetto UNESCO nel quale noi, come Russia, avevamo una parte considerevole (vi partecipavano 5 Paesi). Mediante la partecipazione a questo progetto ci eravamo orientati bene in merito alle situazioni in cui lo strumento in esame diventa efficace per incentivare la comunicazione e, quelle in cui, invece, rappresenta un distacco dalla realtà e, cosa principale, in quali condizioni facilita lo sviluppo dei bambini. A un certo punto abbiamo lasciato questo indirizzo e non lo abbiamo più portato avanti. Quando si pose come obiettivo, lo abbiamo considerato in base a quel progetto. Adesso non vi prendiamo parte direttamente ma, al tempo stesso, nel progettare una nuova scuola − la scuola della compartecipazione (*sovmestnost'*) − e nella messa in opera di tale scuola, questi strumenti saranno assolutamente richiesti e saranno inseriti come strumenti organizzativi per l'attività congiunta di bambini e adulti.

Kudrjavzev – Torniamo nuovamente alla dimensione teorica. La psicologia dell'Attività. Se non erro questo costrutto lo ha messo per

primo in circolazione lo psicologo finlandese Jurij Engestroem; nel suo libro "*Learning by expanding*" uscito nel 1987 a Helsinki e successivamente ripubblicato. Peraltro, è del tutto evidente che esistono precise diversità storicamente determinate tra la metodologia dell'Attività e quella storico-culturale, se non altro perché l'una scaturisce dall'altra, ma si parla di genesi quando non possono non esserci ulteriori differenze, ma persino tali differenze vengono interpretate diversamente.

Rubzov – In primo luogo io conosco molto bene Jurij Engestroem e siamo colleghi ed amici per ciò che concerne la storia della questione e oppositori per la sua sostanza.

Non mi sono mai trovato d'accordo con Jurij a proposito del metodo culturale dell'Attività in psicologia, nel quale egli unifica i paradigmi storico-culturale e quello dell'Attività. Di fatto ha ricondotto ad uno i due metodi. Da notare che nel far questo era come se dicesse "A che ci serve sdoppiarli?". Pensate ai termini con cui descrivere gli uni e gli altri. Noi abbiamo introdotto i concetti "oggetto, strumento e soggetto" e in questo sistema di concetti possiamo lavorare molto bene. Effettivamente ha risolto non pochi problemi pratici. Ha fondato e dispiegato i sistemi funzionali. È importante? Senz'altro. Ma in che cosa risiede lo sviluppo? Per noi si tratta di un problema critico.

Kudrjavzev – L'ha posto sul flusso tecnologico, per dir così.

Rubzov – In questo senso è uno dell'Attività. E non casualmente non adopera la parola "storico", e la parola "culturale" assume un senso particolare nella sua ottica. Che cosa significa per Vygotskij psicologia storico-culturale? È la psicologia delle comunità che si sviluppano storicamente, delle situazioni sociali che si modificano. Lo sviluppo umano, nel pensiero di Vygotskij, è condizionato dalla modificazione della situazione sociale, che ha una natura storica. È noto il modo in cui Vygotskij si riferiva alle idee di Marx. Davydov, nella sua lezione che aveva il titolo "Problemi irrisolti della teoria dell'Attività" acuisce appositamente tale questione – il problema della relazione tra psicologia storico-culturale e teoria dell'Attività.

[…]

Per quanto attiene la posizione di Jurij Engestroem la parola "culturale" si riferisce agli strumenti dell'azione che si presentano nella funzione di strumento e di segno.

E sebbene lo stesso Engestroem sia "uno dell'Attività" a sua volta, a mio parere riduce molti degli aspetti dell'Attività stessa alle sue componenti operazionali.

La domanda che gli rivolgo in proposito è la seguente "Jurij dove è scomparsa la stessa situazione sociale, o più propriamente la sua modificazione? E dove le coordinate storiche del suo sviluppo?"

Jurij Engestroem ha effettivamente mutuato molto da Leont'ev, in un certo grado è allievo di Davydov, ha preso l'aspetto tecnico-operazionale di questa teoria e la sviluppa in modo splendido. In molte questioni siamo d'accordo, ma propriamente nel metodo no. Accanto a Jurij Engestroem si è formato un gruppo di ricercatori che realizzano in modo completo il livello operativo del suo funzionamento. Nei congressi internazionali sulla psicologia culturale dell'Attività gli si contrappone la teoria di quegli studiosi che si attestano sui fondamenti della psicologia storico-culturale e della teoria dell'Attività.

In questo dibattito per noi è importante sostenere gli aspetti socio-culturali e storico-culturali. Socio-culturali non nel senso per cui sono state messe insieme le persone, ma nel senso di una comunità che dispiega una stessa attività. Il problema dell'inizio è quello dell'uovo e della gallina, sono cose interconnesse e interpenetrate. Ho risposto in qualche modo alla tua domanda?

Kudrjavzev – Perché "in qualche modo"? Tutto è articolato a suo modo.

Rubzov − Diagnosi triste.

Kudrjavzev – Da un quarto di secolo sei a capo dell'istituto di Psicologia della RAO (Accademia Russa dell'Istruzione). Per giunta si tratta di una eredità dei nostri docenti per le teorie, per i libri, per gli articoli. Questo Istituto te lo ha affidato in mia presenza Vasilij Vasilevič. Posso affermare, come osservatore esterno che non ha lavorato un sol giorno presso l'Istituto, che non soltanto hai saputo conservarlo attraverso i momenti difficili della sua esistenza.

Questo Istituto lo definì in modo molto felice, alla sua maniera, Vladimir Petrovič Zinčenko un ponte di parata per la psicologia russa. Tu insieme con altri hai portato in esso una serie di nuovi indirizzi, per giunta molto produttivi. Come vedi questa novità e che cosa ritieni necessario fare, su questo piano, per la sua storia prospettica futura per te e i tuoi colleghi?

Rubzov – Si tratta di un luogo che mi è caro per motivi vitali, perché in questo istituto sono cresciuto, al suo interno sono diventato ricercatore, ho camminato, mano nella mano, con Vasilij Vasil'evič, il quale, si può dire che me lo abbia legato per testamento. È un organismo complesso, sia dal punto di vista storico che sociale, con problemi complessi sia di allora che di oggi, con una pluralità di metodologie, concezioni, tradizioni scientifiche. Mi è riuscito di fare tre cose, ripristinare, conservare e inaugurare nuovi progetti scientifici. Sono stati pubblicati due volumi in occasione del Centenario dell'Istituto di Psicologia. In uno di essi sono raccolti "I migliori esempi delle ricerche scientifiche dell'Istituto" e questo volume rappresenta la storia del nostro Istituto. In esso si trovano vita e attività dei collettivi, gruppi e laboratori dell'Istituto, e si documenta che cosa è l'istituto di Psicologia.

La prima delle cose che sono riuscito a fare è di presentare il valore attuale di quelle scuole scientifiche che erano sorte e si sono sviluppate nell'Istituto di Psicologia e, realizzandone un inventario, fare un'analisi di queste concezioni scientifiche. Obiettivo importante che l'intero collettivo dell'Istituto ha perseguito nel corso di molti anni. Onore a lui per questo.

La seconda cosa che mi è riuscita, da Direttore dell'Istituto, è stato il consolidamento delle scuole scientifiche. L'Istituto è oggi una polifonia pluralistica di scuole scientifiche coltivate al suo interno. Sono le tendenze relative allo sviluppo nei periodi diversi dell'infanzia, è la psicogenesi, l'autoregolazione, il Laboratorio di psicologia della prima età scolare, la psicologia dell'emergenza e molto altro. Infine, il terzo degli obiettivi che mi è riuscito raggiungere, in considerazione del suo solido patrimonio scientifico, articolare l'Istituto in indirizzi deputati alla soluzione di problemi attuali della scienza e dell'istruzione. In questo momento l'Istituto si trova in una posizione d'avvio che renderà possibile ancora una volta dare dimostrazione del suo potenziale. In base al livello dell'attività editoriale posso affermare che è e rimane uno dei migliori, tra gli istituti che afferivano in precedenza all'Accademia Russa per l'Educazione (RAO). Nel settore delle ricerche applicate è attuale il suo criterio per il trattamento di diverse tipologie di bambini e dell'infanzia in genere. Insieme con l'Università Psico-pedagogica di

Mosca (M.G.P.P.U.) è un Centro moderno per la scienza, l'istruzione e la pratica.

Kudrjavzev – Approfondiamo la chiacchierata? La nostra Università statale psico-pedagogica in poco più di 20 anni ha raggiunto lo status di college psicologico (se ricordi se ne parlava con Arkadij Margolis ed ero presente anche io). Guardiamola oggi. Senza dubbio ogni vanteria non sarebbe positiva. Mi limito a ripetere le espressioni che si sentono in giro tra gli esperti. È 'il vessillo' riconosciuto degli studi in ambito psicologico. Il primo Ateneo nella graduatoria del paese per i risultati conseguiti negli ultimi due anni. Il luogo in cui l'istruzione maggiorante diventa condizione incrementale dell'intera università.

Istruzione e sviluppo sono offerti in un'unica forma di ricerca nella quale fin dall'inizio sono immersi docenti, discenti, aspiranti. Infine, lo slogan (anche se questa parola non mi piace) riflette la realtà della nostra vita, "università come una comunità di persone non indifferenti", è una forma particolare di vita che bolle dentro e bolle tutt'intorno, in quanto l'università aggrega molto materiale vivo, pensante e produttivo tra ciò che si trova a Mosca e non solo. Soprattutto dopo che siamo diventati Ateneo Federale. Ma dí un po', c'è un segreto di guerra? Non provo a indovinare perché sono a favore del fatto che si predisponga quanto più possibile formazione psicologica differenziata, in quanto questa viene abbastanza di frequente screditata. Come sei riuscito, nell'arco di 20 anni – arco temporale abbastanza breve – in tutto ciò?

Rubzov – Probabilmente le cause sono molte, ma ne cito tre. La prima: questa università si colloca sulle spalle di giganti. L'Istituto di Psicologia, le concezioni scientifiche, le persone con cui ho avuto l'opportunità di lavorare. Ho compiuto il tentativo di aggregare qui la cultura organizzativa del pensiero, dell'istruzione, dell'attività che si veniva accumulando come fondamento per la formazione e la strutturazione di un sistema di preparazione di specialisti all'interno di questa università. E fate attenzione al fatto che il principio che fonda le ricerche scientifiche caratterizzanti l'Istituto di Psicologia, qui diventa principio per la strutturazione dell'istruzione. Il programma scientifico è il piano di studi individuale di ciascuno studente. Senza le ricerche, noi diciamo, non è possibile fare formazione e dare istruzione ad uno psicologo specialista di livello

nel suo settore. Il primo principio è la scientificità delle ricerche stesse, che è stato posto alla base del sistema dell'istruzione.

Il secondo lo definirei principio della condivisione (*obščenija*). Se scegli questo ambito, come psicologia, anche il tuo rapporto con l'Altro diventa fondamentale nella tua professione, non puoi più rapportarti agli altri senza attenerti a questo principio. Ogni sottosezione riceve la sua autonomia, il diritto a sviluppare la sua vita interiore ed esiste in modo sorprendente, incrementando al tempo stesso questa università. È liberta delle comunità di persone che praticano scienza e formazione.

Infine, il terzo principio è il principio della progettazione applicata alla formazione. Una forma di pratica in cui, non a parole ma con i fatti, gli studenti prendono conoscenza con direttive diversificate dell'attività di futuro psicologo che inizia fin dal secondo semestre. Senza questa non sarebbe possibile strutturare correttamente la propria carriera professionale. Importante anche dire, come hai già fatto in modo preciso, che tutto questo si basa sul fondamento della non indifferenza. Un principio particolare giunto qui insieme con coloro che hanno costruito questa università e con quelli che si educano e crescono in essa. Da noi sono venuti splendidi professori. Che amano e valutano questo al livello universitario.

La citazione di questi tre principi, libertà nella istituzione di comunità di interessi, direttiva delle attività di ricerca scientifica e pratica universitarie, sono stati i principi che hanno reso possibile mantenere l'unità della comunità universitaria in una dimensione viva, sonora e in evoluzione. Da noi, tanto per citare un caso, sette nostre riviste scientifiche sono rientrate nel Web della scienza e delle sue finalità e non è frequente che Centri scientifici eminenti nel mondo possano vantare qualcosa di simile.

Kudrjavzev – Forse solo l'M.G.U., l'Università Statale di Mosca, tra gli istituti di istruzione superiore moscoviti.

Per cui la nostra università è un complesso di formazione scientifica effettivamente funzionante per la "Psicologia". Rientra, nell'integrazione con l'Istituto di Psicologia, nella storia dello sviluppo della psicologia in Russia, come Centro per la scienza, la formazione e la pratica.

Kudrjavzev – E come un complesso non soltanto formativo, ma di condivisione (*obščenie*).

Quelli per i quali gli altri divengono una esigenza o, come diceva Davydov, un bisogno, trovano posto qui. Perché? Poiché ricevendo istruzione qui acquisiscono la capacità indispensabile di costruire una comunità con gli altri e di collaborare con essi.

Kudrjavzev – Lo trovo molto interessante, in quanto effettivamente lavorando in varie università mi capita di incontrare ottimi studenti che interrogavo sempre, soprattutto da giovane, o chiedevo le opinioni retrospettive degli studenti dei corsi più avanzati ed essi mi rispondevano tutti "Siamo venuti qui per risolvere quelli che erano i nostri problemi dell'età adolescenziale. In essi non eravamo certo in grado di orientarci, abbiamo letto i vostri libri di psicologia, ma ci siamo confusi ancora di più". Questo, a conti fatti, non c'entra nulla. Capisco che le persone che vengono qui, in qualche modo si avvicinano a questa scalinata senza ancora sapere nulla di noi. In questa c'è una sorta di mistica e su questa nota mistica potremmo quasi concludere. Ma io ho escogitato, per proseguire oltre, una forma di "sadico tentativo" che ho "rubato" a diversi giornalisti e che si chiama *bliz* e a cui si deve dare una risposta laconica, senza argomentazioni, anche se, per la verità, si può anche non rispondere. Io non ho alcun diritto di costringerti a farlo.

Ecco, peraltro, la prima domanda: Con quale degli antropologi, o per dirla alla russa, con quale personologo e non soltanto psicologo, tu vorresti incontrarti e parlare. A partire da Aristotele fino a colui che ti pare.

Rubzov – È una domanda facile per me e ti spiego per quale motivo. Io mi trovo costantemente in una situazione di dialogo con almeno due persone per me significative – il prof. Aleksej Fedorovič Losev, che conoscevo e con il quale continua tuttora un dialogo di pensiero: una persona che costruiva la logica del pensiero nel momento stesso in cui il pensiero stava svelando il suo contenuto e il suo significato. Un uomo che poteva condurre sul pensiero i più sorprendenti esperimenti e poneva il pensiero in condizioni tali che questo cominciava a lottare, a pulsare, a capirsi. Seconda: direi, a questo punto, Vasilij Vasil'evič Davydov. Non hai un'idea di quanto possa prolungarsi questo colloquio.

Kudrjavzev – Ti stringo la mano su questo.

Rubzov – Ho qualcosa da dirgli proprio adesso. Lui mi ha insegnato molto. Come prima cosa gli direi "Grazie". In secondo

luogo, gli direi "Ricordate Vasilij Vasilevič che discutevamo su questo, e poi su quest'altro e su quest'altro ancora?" E torneremmo al nostro vecchio dibattito interminabile su un nuovo livello.

Kudrjavzev – La seconda domanda *bliz* è connessa alla prima. Le tre persone grazie alle quali sei diventato quello che sei.

Rubzov – Farei il nome, tolte queste due vicine e importanti, di Georgij Petrovič Ščedrovitzkij.

Kudrjavzev – Non avevo dubbi.

Rubzov – E ti dico anche perché. Sono stato suo forte e sempre irriducibile avversario.

Kudrjavzev – Il terzo doveva essere appunto di questo tipo.

Rubzov – Era esperto, moderatore, riduceva l'altro, per dirla simbolicamente, a polpetta in tre minuti e poi se lo mangiava. Mi diceva queste parole "Con lei Vitalij Vladimirovič è molto facile trovare accomodamento. Io l'ho nella mia tasca, come tutti gli altri. Io la prendo e faccio quanto segue: Pfuh! (soffiando sul palmo della mano) e Lei non c'è più". E io di risposta: "Georgij Petrovič, ma io rimango impigliato". "Impigliato dove?" – "Tra le dita, perché sono grosso". Anche questa è una persona che ha esercitato su di me una grande influenza, ma proprio in quanto oppositore scientifico di livello. Anche Vasilij Vasil'evič discuteva sempre con lui. E nel contempo mi diceva "Senti un po' che cosa ne dice Jur'ka (lo chiamava cosi Georgij Petrovič) e cerca di capire. È un gran confusionario, ma in quel che dice c'è gran significato". Ščedrovitzkij era un autentico motore per la dinamica del pensiero di quelli che discutevano con lui, "dirigeva" il pensiero come una guida esperta. Gli sono riconoscente e lo considero una delle persone con cui desidererei molto incontrarmi ancora oggi e il nostro dibattito sarebbe ancora "rovente". Hai chiesto i nomi di tre persone e hai avuto risposta. Ma questa sarebbe incompleta se non ti facessi il nome di mia madre Marija Mihailovna Rubzova. (I genitori sono stati per me dei vicini molto significativi nella vita). Lei era educatrice in una scuola dell'infanzia. La prima pratica lezione su un rapporto non indifferente con i bambini l'ho avuta da lei. Una lezione che ricorderò tutta la vita. La mamma mi raccontava di come in tempo di guerra conduceva i bambini oltre la linea del fronte. "Per mantenere calmi i bambini in quei momenti bisognava amarli molto fortemente" – diceva. Questa la sua posizione.

Kudrjavzev – Qual è stato il libro, sempre se ce ne è stato uno, che ha modificato radicalmente la tua concezione della professione?"

Rubzov – Non ce ne è uno solo di tali libri, ma direi che in gran parte sono i lavori di Aleksej Fedorovič Losev. In primo luogo, il suo libro su "La dialettica del mito", che dimostra come i quadri concettuali e le immagini pulsanti basati sulla parola che si stanno generando nella compartecipazione (*obščnost'*) cominciano a impossessarsi delle stesse forme di esperienza condivisa (*obščnost'*). In proposito, ci siamo imbattuti in questo nei nostri esperimenti. Che cosa è la compartecipazione (*obščnost'*), che comincia a sviluppare se stessa? Essa crea una nuova storia, una scena nuova e nella sostanza genera un mito nuovo. Ho letto questo libro quando era ancora in fotografie. Ha prodotto su di me una impressione colossale. Dà da pensare – una compartecipazione (*obščnost'*) che produce un mito, che anima la stessa compartecipazione (*obščnost'*). E poi, certamente, non posso non menzionare il libro di Davydov "Aspetti della generalizzazione nell'insegnamento". L'ho letto se non cinque, almeno quattro volte approfonditamente, letto come si deve, per giunta. E ho letto con gran difficoltà Vygotskij. Perché, dopo i "fisici" non è semplice leggere questi "lirici" complessi.

Kudrjavzev – Il teatro ti piace?

Rubzov – Non posso affermarlo se posto in questi termini. Per me hanno interesse gli scenari e la recitazione degli attori che la effettuano. L'imitazione dei progetti dell'autore calati nei ruoli. L'analisi dell'interazione scambievole attore – spettatore effettuata negli esempi di una serie di opere letterario-teatrali di L.S. Vygotskij dimostra che relazione e interazioni dei ruoli suscitano emozioni e affetti che animano lo spettatore e lo costringono ad esperire e a comprendere la sostanza degli eventi che si verificano.

In generale, la disputa scientifica attualmente in vigore sulla concezione della psicologia da parte di Vygotskij come dramma, scena che genera sviluppo delle funzioni psicologiche superiori con le dinamiche dei conflitti tra ruoli e tra coloro che le vivono, richiede un discorso a parte.

Kudrjavzev – Io ritengo che la psicologia dell'arte sia una composizione di modellazione genetica. Evidenzia come nasce una normale consueta emozione umana, riconnettendosi con la modalità superiore dell'esperienza. In questo senso egli è, certo, uno psicologo

genetico. Quale citazione da una opera di psicologia – di qualsiasi genere – potresti caratterizzare come il tuo Credo nella vita? Puoi anche citarla approssimativamente e non in modo letteralmente preciso.

Rubzov – Potrei citare il già noto "All'inizio era il Verbo".

Kudrjavzev – La domanda successiva càpita proprio a questo proposito. Qual è il tuo eroe preferito in letteratura?

Rubzov – Non ho un eroe preferito in letteratura. Resta incomparabile il gatto Matroskin.

Kudrjavzev – Sì, è senza dubbio una cima irraggiungibile. A questo punto che cosa desidereresti apprendere al momento attuale per esercitarlo a quel livello di professionalità in cui ti trovi a operare adesso? Dove ti rivolgeresti?

Rubzov – Volodja non mi crederai io ho progettato una nuova scuola moderna, secondo tutti i crismi della psicologia socio-genetica, cosí come Davydov ha progettato teoria e pratica dell'attività didattica. Io so adesso precisamente come fondare una scuola dell'esser compartecipi (*sovmestnosti*), prendendo in considerazione da una parte le esigenze organizzative dell'attività compartecipata (*sovmestnaja dejatel'nost'*) dell'adulto − bambini, dei bambini stessi e, dall'altra, certo, l'età del bambino. Adesso so come insegnare ai bambini ad apprendere.

Kudrjavzev – Ma se ci fosse una unità di misura in grado di misurare la crescita personale dal grado di avanzamento più modesto fino allo scatto massimo, all'acme ecc., come vedresti questa unità di misura? Quale sarebbe il suo criterio? Soggettivamente parlando.

Rubzov – Secondo me, se lo facessimo in quanti, è la concezione del senso (*smysl*). Per il fatto che noi ci muoviamo in quanto possediamo dei sensi. Come ha affermato Vygotskij, noi rivestiamo di significato parole senza senso. E in genere, il modo in cui ci muoviamo nella parola, nel senso, è l'inizio del lavoro della coscienza.

Kudrjavzev – Risposta esauriente, secondo me. Dimmi, per favore, l'ispirazione ti trova da sola o sei tu che la cerchi? E in tal caso dove la cerchi?

Rubzov – Sai, Volodja, l'ispirazione è un affare… Le persone cercano l'ispirazione e questo è insensato. Quello che trovano non è l'ispirazione. È emozione, mischiata con l'aspettativa della sua fine.

L'ispirazione è quando capiti nella situazione in cui ricerchi qualcosa che ancora non c'è. Tu devi trovarla e la stessa ricerca, il possesso del senso e del significato della parola, ne valgono la pena. Quando compare, ti domina; si può prendere per ispirazione, ma è più profonda. Vuoi scrivere un certo articolo, vai avanti e indietro, poi ti metti a sedere e… giù, l'hai scritto. Hai afferrato il senso. Tu hai dominato il senso e il senso ha dominato te.

Kudrjavzev – La domanda successiva la faccio ricordando Vasilij Vasil'evič Davydov che, quando ero giovane, mi diceva "Non portare mai la scienza a casa". A casa, in famiglia, non vale. Da qui la domanda: lo psicologo ha il diritto di essere un calzolaio senza stivali là dove è opportuno che ci si sfili gli stivali? [8] Non deve piuttosto, anche se solo in senso virtuale, tenersi gli stivali al piede?

Rubzov – Questa di adesso è la domanda più cattiva che tu mi abbia fatto: "Lo psicologo è un uomo o no?" L'uomo deve restare tale e se è un uomo-psicologo deve rispondere a due esigenze. Perché dapprima ti presenti come uomo e poi porti i tuoi strumenti psicologici.

Kudrjavzev – Anche a casa si può fare?

Rubzov – A casa no. La casa è la casa.

Kudrjavzev – Su questo allora coincidiamo tutti con il maestro. Che cosa è la giovinezza?

Rubzov – La giovinezza è come il talento: o c'è o non c'è.

Kudrjavzev – Ma io ritengo che questa condizione non mi lasci, sebbene sia già tempo.

Rubzov – È uno stato non solo di attesa permanente ma anche della persuasione che tu puoi fare ancora qualche cosa per gli altri. Questo ti permette di sentire l'utilità e l'importanza della tua vita e della tua attività.

Kudrjavzev – Questa decima domanda non a caso l'ho fatta come *bliz*. Questo nostro incontro è anche dedicato alla tua giovane età che festeggeremo in autunno [9]. Non ti faccio gli auguri perché penso che

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[8] È consuetudine russa quando si va ospiti a casa, sfilare scarpe e stivali, spesso, in inverno, carichi di neve e ghiaccio. Agli ospiti vengono offerte particolari calzature di panno dette "tapočki" che non devono mai mancare negli ingressi.

[9] Vitaly Vladimirovič Rubzov ha festeggiato 70 anni in ottobre.

la gioventù possa sopravvivere a lungo. Ti ringrazio di avermi dedicato attenzione e tempo – so, infatti, quanto sei occupato. Mi sembra che tu abbia dato un avvio possente al nostro progetto e me ne è giunto il significato cardinale. Perché un conto è quando prepari tutto questo, quando ti appresti a parlare con qualcuno, e un altro quando si tratta di persone molto care… Quando fai le cose sul cartaceo è un conto. Io l'ho afferrato, ce l'ho e ne sono ispirato e penso che ci sia necessario un terzo, un quarto partner virtuale.

Rubzov – È necessario.

Kudrjavzev – Ma talvolta bisogna tenerli dietro la porta perché non sempre nel discorso devono interferire con noi. Grazie infinite a te! E ad un nuovo incontro!

Rubzov – Sono io che ti ringrazio perché in primo luogo è una buona idea dare inizio a questi incontri. In secondo luogo, è due volte buona, perché li hai iniziati presso questa università e presso l'Istituto di Psicologia. Tu ne sei parte, dal sistema di fondamenti – come lo sono io e come ho sempre ritenuto che fossimo. Sei un uomo di salde radici. In terzo luogo, voglio dire che questo è importante per coloro che ci seguono – noi rispondiamo per loro. Senza questa traccia storico-culturale moderna non si ottiene nulla. È il testo, parola viva, e la Psicologia dell'*Io* – Psihologi-*ja* [10] – il significato informale di questa parola vivente di cui sono portatrici le persone che hanno istituito, generano e genereranno, in futuro, quel sapere a cui noi tutti apparteniamo. Queste persone sono partecipanti non formali della comunità professionale viva e in un certo senso irripetibile. Ti sono sinceramente riconoscente perché, con il realizzare questo incontro, divieni conservatore di tradizioni scientifiche. Auguro pertanto al tuo progetto ogni successo. Mi è doveroso farlo.

Kudrjavzev – Onore al nostro progetto, è il progetto dell'università. Grazie!

(Traduzione e note a cura di Maria Serena Veggetti, per il Corso di Psicopedagogia della Comunicazione, Sapienza Università di Roma, A.A. 2018-19)

[10] Nel termine russo per psicologia è contenuto il pronome personale io, *ja*.

2. A new need in today's world-inclusive education on international level. Prospective/future developments

Maria Serena Veggetti

2.1. Inclusion and internationalization. Intrasubjective vs intersubjective dynamics

To analyze the dynamic processes underlying: 1. inclusion as a goal of socialization and education: 2. internationalization of scientific-cultural initiatives at university level, now widely shared and focused in almost all the countries of the world, it seems appropriate to start with the recent concluding remarks which I presented at the conference of the International Makarenkian Association (Rome, Tor Vergata, October 2018). Every modification of society has to move from education. It comes out that both these objectives, now widespread, have similar traits.

In fact, inclusion aims to eliminate discrimination and prevarications present in the competition characterizing education and instruction and also, necessarily, socialization, as it represents the definition of social belonging in the life of anyone who comes into the world. Internationalization, in turn, aims to overcome the boundaries of educational institutions linked to the culture and social organization of each country, consequently recognizing the former as similar institutions,though operating in different nations and social communities.

Both inclusion and internationalization, therefore, on the macrosocial level imply that we refrain from considering as unique and different, objectives and regulations of the institutions appointed to the social and cultural formation of the new citizens, by virtue of

the substantial identity of these, even in the particular norms that define training paths in different countries.

Adherence to both inclusion and internationalization imply, from a psychological point of view, an involvement of many, individual and/or collective, that represent almost all the participants in the institutions involved, with the explicit motivation that each of them identify with the objectives and in the paths to reach them.

Therefore, in the psychological sphere, we must start with a convinced sharing and knowledge of the alterity of our neighbour and the intention to abandon the logic of competition, which has always been, generally, typical of education in Western EU countries. Topics that simultaneously refer to two disciplines, pedagogy and psychology, are rarely sufficiently taken into consideration for the meaning they have. Significant in this regard are the criticisms of the policy of the European Commission, initially adhering to the competition as a fundamental value of education, as stated by P. Lucisano, in his speech at the Meeting on the occasion of the 120th anniversary of Vygotskij's birth. (Moscow 2016).

2.2. Educational psychology and instruction. The links with politics

An examination of the measures introduced at political level for education by almost all countries, with rare exceptions, shows that often education sees its resources and government allocations in the sector systematically diminished.

On the one hand, the awareness that social discrimination can be eliminated with economic interventions aimed at ensuring the inclusion in a minimum income threshold, seems to be widespread today, as demonstrated by government interventions for the redistribution of income among citizens, recently undertaken also in Italy for instance. On the other hand, we are witnessing the simultaneous and systematical removal of funds from education, instruction and research.

The only historical exception to this regime was the policy of the newly established Soviet Union and the massive investments in the field of the liquidation of illiteracy that were actually conducted and completed, at that time, in the countries pertaining to the former

Soviet Union. It is no coincidence that, in the Soviet sphere, in the second and third decade of the twentieth century, there were unique experiences in education and formulations of educational psychology, or pedagogical psychology (Vygotskij, 1926, Makarenko, 2003).

These considerations justify the interest that can today be read in some very famous scientific contributions in the pedagogical as well as in the psychological field, thanks to the work of two personalities active in the Soviet era, respectively A.S. Makarenko and L.S. Vygotskij.

Both these scholars, while having different social affiliations and placement in two different territories of the former Soviet Union, being the first born in a township of Ukraine, Belopole, and the second in the small town in Belarus near Gomel, realized a mirrored and complementary contribution to the science of education. The fact that we approach both is due to their common objective, to activate an educational programme, based on an explanatory conception of psychological genesis of a new and better man, with a more adequate self-realization in the vital context, commonly considerable well-being. What is more peculiar is the shared type of well-being, acquired as a result of effective personal education and instruction.

It is even more peculiar how the second of the two scholars emphasized the notion of social experience, responsible for the sociogenesis of the higher cognitive processes in men. (Vygotskij L.S. 1926, 1934) The first, with his practical experience as an educator, initiated the foundation of the communities for the protection and education of children who were abandoned, or in any case devoid of any family support. His main work, “Pedagogic poem”, represents a scientific-literary genre of great interest as it is entirely new.

A young Italian scholar G. Consoli (2008) analyzes it in the light of a range of literary genres that are represented,such as narrative, novel of life, scientific report, to underline, in the wake of the opinion of G. Lukacs (1920), the uniqueness of composition in its ingenious efficacy.

The two scientists above mentioned, represent key-moments of a revolutionary conscience that struggles to endure so that, one could mantain, without accepting a waiver of the movement's dynamism and the collective dialectic animation, but projecting them into an

education and an epistemology of knowledge, that stems from a person's rights, as represented by our Constitution.

In fact, the two characteristics, the social experience and the sharing of the educational experience, indispensable according to the authors, seem to provide effective solutions, for two of the most difficult problems of Psychology and Pedagogy, such as the inclusion and the predisposing of equal educational opportunities for all, at least in the educational contexts of two countries such as Russia and Italy. The latter also in the opinion of N. Siciliani (report at Int. Conference on Makarenko, Rome, Tor Vergata, 2018) presents common traits and

> "[...] They sink however their roots in an ideal, moral and civil soil not dissimilar. A land littered with historical-cultural relationships rich in similarities and differences. A land ploughed, cultivated and fertilized with the seeds of the respect of the individual people and of the collective good, the ground of common social and civil rules, the ground of the human potential of the free citizen as 'new man' born from a revolutionary process providing radical changes." [1]

2.3. Education: social and personal goals

The seminal investigations of the representatives of the Makarenkian pedagogy as well as the contributions of the followers of Vygotskij in Russia, notably Davydov (1996) and Rubzov (see in particular his volume of 2008), are faced with the preliminary problem of implementing philologically complete readings of the works of these two scholars. It is proved by the different editions of the "Pedagogical poem" and the "Thought and language", the latter being the only contribution, among the many actually made by the same A., widespread in the West, primarily through a US re-reading (Vygotskij 1962). Explaining this fact is possible only by considering goals and aims of education and instruction in the widest range of their findings, especially in reference to compulsory general education in various countries in Europe at the beginning of the XXth century.

[1] N. Siciliani (report at Int. Conference on Makarenko, Rome, Tor Vergata, 2018).

Each nation establishing a compulsory school has as its purpose the formation of a general population with basic competences, considered to be indispensable. That is, it basically has pedagogical objectives of social relevance, but ensuring a mandatory basic education has not been achieved in all countries providing parity of contextual opportunities (scholarships, colleges, houses - family, boarding schools), suitable for the preparation of starting conditions guaranteeing equality for all.

A formal right to education for all, as stated by the Constitution of most countries, does not itself reduce the social disparities among citizens, namely, the concrete conditions of learners to acquire practically the same education without inconveniences, sometimes insurmountable, and traumatic consequences, often latent, to the detriment of personality.

An affordable instruction that makes the learner feel included in a sphere of wellbeing is still not an aim in the eyes of politicians. Perhaps because they consider it implicit and coming out as a result of the formal acquisition of the right to basic education. In these conditions, compulsory education becomes a place, in which the existing social differences are not bypassed and the creation of further social differences is predisposed.

The scientific debate on these considerations calls into question the relationship between intellectuality and political management in each country. In Russia in the early twentieth century, the pedagogist Blonskij, master of Vygotskij, had moved severe criticism about the adoption of the notion of IQ, in favor of different ways to prepare didactical interventions (1919) and disputes spreading in the *Pedagogical poem*, between the figure of the educator Makarenko and the representatives of the pedagogical Olympians demonstrate the feable state of the understanding of complex problems of educational relationships among the politicians.

Both the practical experience of Makarenko, educator within the communes, and the explanatory psychological conception of becoming a man, formulated by the historical-cultural psychology of Vygotskij are distasteful to their contemporary evaluators.

In the concept of social experience as responsible for the formation of the higher cognitive processes in man, Vygotskij indicates precisely the genetic moment of the formation of the person with

subsequent, various, individual differences. The notion of social experience, analogous, but not coincident with the idea of science and experience delineated by Dewey, is however, further deepened by Vygotskij when he postulates the idea of cooperation between those who know and do not know, in the Zone of Proximal Development (1930).

Their general conception of learning and school-learning implies the logic of cooperation carrying out the cognitive growth with involvement of the global person. Learning becomes a purpose of the collective work in the classroom, as the research of V.V. Rubzov shows, and, in labour - community of Makarenko - was such to generate productive work with full satisfaction of the collectivity.

Collective working with awareness of a common purpose means to provide inclusion, integration in the most general sense, in sharing the same goal. This general significance came today, in the school context, to take on a more limited, specific, value aimed at avoiding exclusion, of those who present special learning needs (commonly: S.N.E., Special Needs in Education). The purpose of social inclusion is broader, as it has the value of an involvement with an understanding of its socially shared activities.

In this broader sense, it will be considered in the subsequent exposition, to conclude that only a dialectical synergy of the disciplinary sectors concerned allows to solve the problem of inclusion on a political and interinstitutional level and so also, in the long run, on a social level too.

2.4. Inclusion: A prospect

Social experience, inclusion, cooperation are emblematic concepts in the social practice of work. To the latter the socialist pedagogy has devoted lively discussions, as the Russian colleagues might well know. There are mentions about the different positions that pedagogists and psychologists assume with regards to the work as related to school-learning.

Different conceptions about the "school for work" are known (Blonskij, 1919) and the polytechnic typology of work were exhaustively commented by the same Vygotskij (see 1926, chapter 10).

The working relationships change over time and the school should, according to Rubzov in his program of a "School for the design", repropose the historical phases of such changes in order to form a social conscience adapted to the age-related development of the school-boy (Rubzov, 2014).

In the pedagogical sector an exceptional position is given by the experience of Makarenko, who, as an educator, directs the communities as a collectively based work and, according to this, being economically self-sufficient. It is, however, important to remember that this was their only subsistence possibility, given the historical moment of complex economic reformation of a country with a government representative of a socialist revolution.

The practical thickness of the education for work in the considered countries, cannot ignore or forget the ideas of the Italian philosopher Gramsci (v. 1964², vol 2, *In search of the educational principle*). Even if a reference extended to all these sources would require a site different discussion from the present contribution, the fundamental right to work is precisely deviced by the first article of the Italian Constitution, to the study of which Nicola Siciliani, has recently dedicated deep attention, especially in the frame of his activity as a volunteer for educational experiences in prisons of different regions of Italy.

But school-learning, at least in the European tradition, does not come to comprehensively consider the relationship between studies pursuing theoretical knowledge and those forming practical skills. Gramsci's critical observations on schools providing early training to work are recurrent.

This is why it seems important to focus on a concept possibly considered a perspective pole, common to all points of view evoked up to this moment, theoretical, psychopedagogical and social: the problem of perspective. The "prospect of tomorrow", observes G. Consoli (2007, quot., p. 149) with reference to the reading carried out by Lukacs (1957) of the *Pedagogical poem*, becomes the essential element, constituting more a type of realist fiction, than a concrete aspect of reality. The prospect is the type of future, which essentially characterizes the socialist realism. For Makarenko it is this real and not subjective-utopian perspective of the whole process of activity that is made concrete by the underlying actuality.

If one looks back to the analysis of today's public institutions of education, school and university, the perspective in the sense, as outlined by Makarenko seems to exist more in the delineations of *scholae* to create, than in reality. On the other hand, three main references elucidate the question: 1) V.V. Rubzov (2008) with his programme for the new school for the design, to begin with the most recent proposal; 2) similarly Gramsci, in its analyses of the relationship between school and university, which denounces the lack of an orientation in the practice and the general lack of an effective relationship teacher - student; and 3) some data underlined by the experimentations carried out in Russia according to a design by V.V. Davydov (1988,1996) on the developmental learning as didactic objective.

The recent development of the latter conception focuses on a real perspective inspired by heteronome and non-donor didactic experiences with the attainment of the learner autonomy in the course of an effective education.

It is, in fact, possible to find, in all these scholars, the delineation of a prospective, by means of introducing research - activity in school - learning, to be carried out in and by the class collectively, additionally recommending to manage the alternation of roles and the rotation of the tasks among the participants. The latter, as all pedagogists can remember is an atavic problem, endemic also in the history of work of macrosocial relevance.

The guaranteed welfare, the wellbeing of the student is generated from all these instances. The research platform is the only one able to clear the differences between teacher and learner in the context of education, even in a formal context. In this respect, the research could also guarantee an effective inclusion, extended, by providing adequate infrastructures of support for special didactics in the cases of SNE (Special Needs in Education), to all those who, by birth or accident, are not directly reachable. Remember, in this regard, Vygotskij's claims about the physical or physiological defect, requiring an obligation to provide a way for it's overcoming.

In addition, probably, in the interactions between subjects who conduct research with the presence of a lecturer, who still has a role as an educator, it is also possible to bring back a great forgotten in the instruction: educational activity. Gramsci wrote in fact "…it is not

entirely accurate that instruction is not even education: having insisted too much in this distinction has been a serious mistake of idealistic pedagogy, the effects of which in the school reorganized according to this pedagogy are clearly to be seen" (1964², vol 2, *In search of the educational principle*, p. 107).

We will refer, below, to the role of universities in contemporary society with regards to the prospect of Makarenkian pedagogy, to see how the policy of its internationalisation does not contradict the idea of "creative school" and of Education as delineated by Gramsci, nor much less the idea of "School for the design" advocated by the experimentation of Rubzov in Russia, but can indeed be a coherent perspective and, all in all, of contained costs.

2.5. Internationalization at University level

One of the typologies of literary genres evidentiated in the *Pedagogical poem* of Makarenko is the "childhood-romance" (Siciliani, 2002). One can observe, as done by the Italian scholar cited above, that it pre-supposes and immediately re-proposes the theme of the growth and of the future prospective that the experience of Makarenko as educator-narrator outlines by exposing.

In its presence is connected the component of welfare in school, or in any case in the formal learning situation. The childhood of a new man, for a new society, is facing the topic/problem of work. For Makarenko the vital context of the labour communities is the work. The latter is inherently inclusive. The prospect of work is essential for the birth, or re-birth, in the case of the imprisoned students, of the social subject successfully included in the vital context. But the problems are posed, in the case of the boys of Makarenko, by the representatives of the educational Olympus, of the official pedagogy, at political level.

There is essentially a clash between the legislation regulating social work and the concrete situations in which this is implemented as a productive activity, in the perspective of the formation of an independent social subject.

What work at school? Such a question was recurrent in Blonskij and Vygotskij and for so many others that it would not be possible to mention here. Actually, in Vygotskij (1926) there is important and

significant criticism to the way, in which the work is proposed in the school as training activity at the time. This does not refer to didactics, but to the type and manner in which the work was proposed as an activity inside and for the school, presented as pedagogical innovation, among other things, in the name of the pedagogist Blonskij, without having the faintest resemblance. This criticism also affects the world of politics who manage it, or even bureaucrats, more or less aware of the meaning of the aim.

In Gramsci's analysis, the relationship with real life as a practical experience refers to the work, but clashes with the division between humanistic culture and existing manual work, deserving his immediate criticism of the total ignorance of each other, bringing about in Italy, a total separation between Humanistic and vocational schools (Gramsci, quot.).

If one considers the set of contradictions, in which the reality of facts lies, in comparison with the established rights of the Italian Constitution, Art. 1- Italy as a republic founded on work, Art. 4, right for a job, Art. 34 right to achieve the highest levels of Education for all, and, conversely, a reality, in which work seems to be a mirage, compulsory instruction is not carried out in a generally inclusive way and the duty of the prisoner to have to serve his sentence without the result to live for the punishment, you can only pose the question of whether it can indicate a path that makes accessible for each of the social subjects, for whom education and/or re-education is provided, the prospect of tomorrow.

Only the latter, according to Makarenko, characterizes a future in which we recognize successfully integrated subjects or, to say it more precisely, people-productive for themselves and others.

A response seems to be found in some evidence of a research realized in Russia for the entire span of compulsory schooling, based on a project of V.V. Davydov.

The data of this longitudinal, empirical research, which lasted a total of ten years, exposed by G. Zuckerman and A. Venger (2010) have shown that only the introduction of research activity in basic school, starting from the primary years, attains the formation of a free learner, able to individualize and autonomously choose sources of knowledge, having a more suitable relationship with the orientation in practical reality.

As most of research activity is generally pertaining to universities, the path of introducing it into the lower primary and secondary education range would abolish one of the major gaps between secondary and university education.

Other advantages would be to clear the differences between teacher and learner and therefore facilitate the establishment of a social situation of sharing and cooperation. The research would, in fact, create shared objectives of some experiences new and not competitive, about memories and facts and events already examined.

Moreover, nowadays, the presence of users of different cultures in the schools of each country, if adequately appreciated, enriches the design of research on new and pertinent contents related to the different cultures of the present-day learner.

At university level, just as explained, in the Master's degree course in pedagogy and educational sciences, today at the Faculty of Medicine and Psychology of Sapienza University of Rome, great importance is devoted to the study and practice of Psychopedagogical research aimed at the original empirical investigation of contexts, through training in the methodologies of research and empirical experimentation. From these we expect innovative impulses (TAS Transformative Social Activity) for the design of school activities and for the training of educators for a society, which no one knows, as it will come into being tomorrow and will involve, as learners, today's youngsters.

Emblematic, to conclude, the account of V.V. Davydov (1996, p. 6 passim), reporting:

> "The school must teach to think in a theoretical-scientific way. This must be taken into particular consideration by pedagogists and teachers for a genuine innovation in school education... At the same time theoretical thinking in no case should be identified with the commonly defined abstract thinking based on verbal definitions. Its essential property is the comprehension of things and events by means of a meaningful analysis of the origin and causes of their

becoming and developing. At the moment school-learners start discovering the latter, they start thinking theoretically". [2]

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3. Quality as a Unit of Attitude and Method. A Re-reading of Dewey's *Unit of Science as a Social Problem*

Pietro Lucisano

It is worth reflecting on the meaning of our study and research in the field of education and learning-teaching processes. It is worth doing it because working in a field such as education often leads to disappointments for those who maintain a critical spirit, on the one hand, and authoritarian attempts of those who, on the other one, want to achieve desired results.

The disappointments are due to the fact that it is a field where progress is difficult to observe. If the results of thousands of years of educators, schools and teaching are those that are seen both in the diachronic dimension of historical events and in the synchronic aspect of the news, it is easy to see that for the time being education has proven to be quite ineffective.

It is worth seeking support in the reflections of those who have traveled the same path on which we are moving and look for indications that can help us act more effectively. It is worth trying to better understand how to accept the changes required by the current technological era and learn to use the algorithms, without delegating to a machine our ability and our will to understand.

For this reason I find it appropriate to propose an in-depth re-reading of an essay by John Dewey, *Unity of Science as a Social Problem*, and try to grasp its relevance in this moment of crisis of our social and cultural system, not too different from the one in which the text was written.

The years before the Second World War were a period of intense work for Dewey. He was completing *The Logic,* which is certainly one of the most significant of his scientific works and was at the same time engaged in the defense of progressive schools with the volume *Experience and Education*. In addition, between 1938 and 1939, in the collection of writings edited by Otto Neurath entitled *International Encyclopedia of Unified Science* by the University of Chicago Press, he published two essays: *Unity of Science as a Social Problem* and *Theory of Valuation*.

The two writings are to be read within the context of the collection of works that they were published in and that also marks the arrival of the ideas and considerations developed by a group of scholars, scientists and philosophers who were part of the Vienna Circle between the two wars.

The term neopositivism, often used to define the Vienna Circle, can be reductive if extended to describe the project that was being carried out between the two wars, which was a resumption of the collaboration between philosophers and scientists in order to create a positive path of knowledge of reality on an empirical basis. We can somehow conceive it as the third wave of optimism in the modern age, the optimism that it could be possible for reason to lead to a knowledge of reality that would allow reasonable and binding operational choices.

The first attempt to bring reason to the government in modern times was that of the Enlightenment. The affirmation of the press had led to the idea that it could collect all the knowledge in the Encyclopedia and at the same time be able to bring reason to different governments. The fact that the reason of the French Revolution, after the first four years in which it seemed to have initiated a virtuous and reforming path, turned into a bloodthirsty Goddess and as such was carried away by fear towards terror, unfortunately destroyed the enthusiasm. Subsequently, optimism for reason was slowly reconstructed after the dark phase of the Restoration. It was a slow path in which we see, among other things, the emancipation of the social sciences from metaphysics to a renewed confidence in positive reason. A reason that feels able to govern the developments of the industrial revolution and to create basis for a rational industrial society that is regulated according to

scientific criteria. The most prominent authors, from the point of view of scientific philosophical reflection, were August Comte in France, Stuart Mill and Herbert Spencer in England, and Roberto Ardigò in Italy.

This process was slow and at the same time, it accompanied the industrial revolution and witnessed a substantial change in production systems, the bursting of technology and the acceleration of communication systems. It was a process which could seemingly open the new century in the name of peace and progress. The 1900 Paris Exposition, taking place in a France which again stands out as the leader of a progressive future that proposes "the statement of a century", can be said to be the symbol of this path. If the symbols that go from the Eiffel Tower to the Metro are even today evidence of that moment of optimism, even more evident are the words with which Alexandre Millerand, a socialist Minister of the French government inaugurated the Exposition:

> "What progress can be made, which transformations work, in the space of only three generations, [...]Under our hand we have seen the force of nature enslaved and disciplined. The steam, the electricity, reduced to the part of docile servants, have transformed the conditions of existence. The car has become the queen of the world. Installed by a master in our workshop, the body of iron and steel drives out and replaces, by slow and continuous invasion, the workers of flesh and bones, of which it makes its own auxiliaries. What a change in human relationships.
> The distances diminish until they disappear. In a few hours, paths that were once consumed only in days and weeks are devoured. The telephone, this magician, makes us hear the word and to the timbre of the voice of a friend separated from us by hundreds of leagues.
> While the intensity and power of life grow endlessly, death itself recedes before the victorious march of the human spirit ... Evil, seized to its origins, isolated, yields [...] The triumph of ignorance, overcoming poverty, which higher, what more urgent social duty? [...]
> The peaceful meeting of the governments of the world will not remain sterile. I am convinced that, thanks to the persevering affirmation of certain generous thoughts of which the end of the century has resounded, the twentieth century will see a bit more fraternity and a little less misery than any order and that soon we will perhaps have

> crossed an important stage in the slow evolution of work towards happiness and of man towards humanity." [1]

14 years were enough to see the horrible carnage which the hopes of seeing the reason governing development would end up in. Again reason is replaced by nationalism, the desire for power and the carnage ended only when the last ones in the trenches finally refused to obey, when Russian troops on the Baltic sea threw away their weapons, fraternized with the Germans and decided to fight the ones who had pushed them to fight.

A new period of truce began, but not peace. In this period, while the politicians seemed to promise that, after such a massacre, there would be no more wars, academics resumed their work towards a new season of unity with enthusiasm.

In addition, in Morris's view, it was Otto Neurath's commitment that instigated the endeavor of the design a unified science project. Neurath had started working on this topic in 1920. The enthusiasm of this professor of political economy, a graduate in mathematics, led him to become one of the protagonists of the Vienna Circle.

Scholars such as Moritz Schlick, Hans Hahn, Otto Neurath, Philipp Frank, Rudolf Carnap, Victor Kraft, Felix Kaufmann, Kurt Reidmeister and Herbert Feigl, took part in the Vienna Circle, but the multiple initiatives and scientific conferences on the Unity of Science saw participation of other authoritative groups such as the scholars of the Berlin School (Hans Reichenbach, Alexander Hezberg, Walter Dubilav, Kurt Grelling, Kurt Lewin, Wolfang Koehler and Carl Gustav Hempel) and, later on, the Americans of the Morris group. Neurath's project was an ambitious one. Over the course of almost twenty years the Encyclopedia project was formulated several times, reaching the ambitious hypothesis of a 26-volume work with 360 monographs accompanied by a 10-volume Visual Thesaurus. The very character of the Encyclopedia is rather significant, since it was an initiative without precedent, at least in the field of philosophy, as regards the extent of cooperation (Visalberghi, 1939, P. 12).

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[1] https://gallica.bnf.fr/ark:/12148/bpt6k558141g/f1.textePage.langFR

Thus, the *Encyclopedia of Unified Science* can rightly be considered the place of convergence of the most authoritative voices of scholars of human and natural sciences of the beginning of the century. Paradoxically, thanks to this effort of unity, as well as the choice to consider the unity more significant than coherence, this movement was interpreted differently by different authors: as neopositivism, logical positivism, logical empiricism or even physicalism.

With the advent of Nazism and the consequent dissolution of both the Vienna Circle and the Berlin Circle, the philosophical considerations moved from the European continent to the United States. In reality, neo-positivism had already involved American scholars, mainly Charles Morris. When thinkers such as Carnap, Hampel, Reichenbach, Franck and Kaufmann left Europe, neo-positivism, on the one hand, broadened its horizons and, on the other one, was forced to downsize its projects. In the end, only the first two volumes of the Encyclopedia were released.

The *Encyclopedia* was a complex endeavor that contains different kinds of works whose common denominator is the attempt to reach a common scientific method that would be applicable not only in the area of scientific disciplines in the strict sense, but also to the complex human activity as well as in the attribution of a decisive function to the language in the process.

We have emphasized how the richness and variety of the contributions that pertained to neo-positivism make it impossible to see it as a unitary school of thought. It is, nevertheless possible to identify a common denominator in the effort of these researchers that can be summarized as an aversion to irrational and preconceived positions and in the effort to find a common language between different sectors of investigation that would allow a scientific concept of the world.

Dewey's contribution consists precisely in proposing an experience, not only the laboratory one, but the human experience as a whole, as a testing ground for the scientific method, which as such needs to be applicable to all areas of human activity. Therefore, the discourse on the unity of science must not be limited to a single path of experts and/or scientific disciplines as a different way of building a democratic society, created by the collaboration of citizens who are all able to move intelligently with a scientific attitude.

The need for an ethical foundation for this attitude emerges in Dewey's essay, which allows for a contrast between multiple resistances and a constant reference to reason in making decisions related to the complex area of human activity. The ethical necessity, for which Dewey tried to set a scientific foundation in the essay, was described in the second volume of the Encyclopedia, and addressed the problem of goals and their operative definition.

At the same time, the awareness of the crisis of science constantly reduced to its products and to the closely connected crisis of the school where these products transformed into notions are imparted carefully. At the same time, avoidance to transfer the methodological awareness that has allowed their elaboration emerged.

The limits of the development of science lead the authors of the Encyclopedia to limit their objectives to the unity of scientific language (Carnap), or to the unity of method (Russell), or as Dewey proposed to a search for a scientific attitude that would be a prerequisite for an intense work of cooperation among researchers of different disciplines.

The crisis, unfortunately, remains relevant despite the further conquests that, in the half century that separates us from Dewey's reflection, the individual scientific disciplines reached. Relevant despite the fact that the acceptance of science as a reference for the choices was also proclaimed by the Catholic Church in a solemn form by the Second Vatican Council. Paradoxically, it was precisely the results of science that became an increasingly powerful tool in the hands of opponents of the scientific method, and in that way, communication systems, information technology and telematics, rather than being vehicles of a scientific approach,gave new strength to old powers and strengthened the passivity of individuals.

In this context, Dewey's plea becomes so relevant that it deserves to be compared to the introduction to the White Paper of the European Commission, *Teaching and Learning: Towards the Learning Society* (1995), where among the factors of change it is stated:

> "The impact of the scientific and technical world: the growth in scientific knowledge, its application to production methods, the increasingly sophisticated products which thus emerge, give rise to a paradox. Despite its generally beneficial effect, scientific and technical

> progress engenders a feeling of unease and even irrational misgivings in society.
> Many European countries have endeavored to allay these misgivings by promoting scientific and technical culture from a very early stage at school, by defining ethical rules, particularly in the areas of biotechnology and information technology." [2].

The text on the unity of science is articulated in three chapters. In the first one, called The Scientific Attitude, the terms of the problem are clarified. In the second one, the social relevance of the theme of the unity of science is dealt with and, in the third one, Dewey fails to refrain from considering the educational dimension of the issue.

3.1. The science that we are talking about

Dewey's contribution starts from the assumption that any attempt to achieve the unity of science presupposes clarity in the definition of the term in question. In the first place, therefore, it is a matter of defining science and, consequently, deciding what kind of unity of science we are talking about. Only having clarified these elements is it possible to verify whether the desire to achieve the unity of science can be considered as a simple yearning or assumed as a concrete purpose.

"With respect to the question as to the meaning of science, a distinction needs to be made between science as attitude and method and science as a body of subject matter." (Page lw.13.271).

It is a matter of distinguishing the procedure from the results, the process from the product, a distinction that cannot be completely clear, given that these are two closely related aspects.

"I do not mean that the two can be separated, for a method is a way of dealing with subject matter and science as a body of knowledge is a product of a method. Each exists only in connection with the other." (Page lw.13.271). Dewey considers it necessary, however, to dwell on what comes first in temporal order, whether knowledge is a product of experience, of the interaction of the

[2] EU COMMISSION (1995). *White Paper of the European Commission – Teaching and Learning: Towards the Learning Society* (p. 6). Paris: OECD.

individual with reality, whether attitude and method precede knowledge. Knowledge is essentially a result of the application of a correct scientific attitude and intelligent use of the method.

Attitude and method, then, not only precede the acquisition of knowledge in temporal terms but represent an outcome of the dimensions that gradually increase in quantity and complexity. Therefore, while the attempt, the same as the one of D'Alembert and Diderot, to collect all the knowledge that humanity had produced up until the age of enlightenment remains a noble commitment, obviously difficult to pursue, focusing on what helps to elaborate or to build knowledge, allows to bring all the knowledge back to a common denominator, more easily circumscribable, on which it is easier to reach a common consensus and plan its diffusion.

Here Dewey actually re-proposes the idea that the reflective thought, as well as the research that guides it, are created in the interaction with the problematic nature of reality and are activated in the solution of the problems of everyday life, and only later turns to reflection on knowledge and method.

"First we know and then we reflect on knowledge. From this point of view, it is evident that the investigation in the processes of knowledge, in attitude and method come before the material which is found in books, journals, and the proceedings of scientific organizations." (Page lw.13.271).

The use of the terms *attitude and method,* which Dewey holds together almost as if to affirm that they are strongly linked aspects that go together in the construction of the actions and the reasonings that build knowledge, however, requires a further investigation.

3.2. Attitude and Method

The term *attitude* recalls the presence of the emotional dimension alongside the cognitive dimension and, in a way, the fact that it is the emotional component that gives stability to the attitudes. The term attitude often occurs in the works of John Dewey who also uses the term *habit* in this regard.

Dewey dealt with this issue in his *Human Nature and Conduct* (1922), attributing to this term a sense of lasting disposition. This is the tendency to take on practical behavior when facing situations,

people or objects. This trend is certainly related to the beliefs and opinions that nourish each other, but is also relatively independent since it is connected to an emotional and ethical layer that tends to make it more stable and resistant even to elements that should contrast the cognitive aspects on which it rests.

The term *method* has a more ancient and perhaps more complex story to tell. It is, in fact, based on a set of rules whose purpose is to make the investigation procedure effective and not to refute its results. The method is therefore aimed at eliminating a part of the subjectivity of experience. As Bacon stated in the Novum Organum, "For my route to discovery in the sciences puts men on the same intellectual level, leaving little to individual excellence, because it does everything by the surest rules and demonstrations." (1620, aphorism 122) emphasizing how the method reduces the subjectivity of research.

"By method", says Descartes, "I know of the certain and easy rules, by observing which exactly no one will ever give true what is false, and without unnecessarily consuming any effort of the mind, but gradually increasing the knowledge, will come to the true knowledge of all those things of which he will be able." (*Regulae ad diretionem ingenii*, 1628, p. 26).

We need to consider that, in the same period in which he wrote this essay, Dewey was completing his *Logic*, defined as a theory of inquiry and research. In this work Dewey systematizes his theory to overcome the dichotomy between facts and ideas in their common presence within experience, with the aim of overcoming problems and achieving the justified assertion that can become the basis of a shared knowledge.

Attitude and method guide the cognitive process together: attitude by contributing to defining its aims and values, taking on the subjective dimension, which, however, takes on the characteristics of a shared style; method by contributing with a dynamic system of rules. Style and shared rules are then the basis of that democratic society that Dewey continues to hope for even if, in the years in which he wrote, he failed to identify models within sight.

From this point of view, the quality of knowledge is the product of the overcoming of the subject-object dualism, the attitude guides the relationship on the basis of the impulses, which are transformed

into desires and into purpose to choose from the objectives in view. The method intervenes in the management of desires and their transformation. into ends and guides the experience. The genesis of ideas and hypotheses is, however, to some extent more linked to the presence of an attitude capable of extracting intuitive, creative and original suggestions from interaction.

3.3. Attitude and method are available to all individuals

If attitude and method are formed in the solution of everyday problems, in the concrete experience in which the individual interacts with the material context and defines goals and plans of action, then it is logical that these dimensions are common to the experience of all human beings and not just scientists.

"The body of knowledge and ideas which is the product of the work of the latter is the fruit of a method which is followed by the wider body of persons who deal intelligently and openly with the objects and energies of the common environment. In its specialized sense, science is an elaboration, often a highly technical one, of everyday operations." (Page lw.13.272).

Dewey, therefore, considers work as the main way in which man faces the problems of survival and construction of those goods and services that constitute a society. Work is also the context in which experiences which allow the formation of the knowledge that guarantees a justified assertion are created.

It is in the work that problem-solving practices are realized and consolidated, practices that have become rules and knowledge and that have been handed down, but also continuously verified and updated in relation to the changed context conditions.

If we take this approach and we do not separate the process from product, it is clear that knowledge is the result of many attempts as well as of many errors and an intelligent way of taking them into account until finding the solutions that best optimize the relationship between the ideas and objectives that can actually be achieved, and which allow the procedures that have achieved optimal results to be generalized until proven otherwise.

The scientific reflection on these aspects, the reflection on the epistemology and on the methodology come subsequently and

represent a re-reading, "an elaboration, often highly technological, of daily operations" whose meaning, however, must be relocated within the experiences that generated it, otherwise we run the risk of losing its authentic nature and of giving the acquired knowledge a rigidity that it does not have nor claims, with the risk of understanding science not as a continuous research but attributing to it religious and metaphysical dimensions.

"In spite of the technicality of its language and procedures, its genuine meaning can be understood only if its connection with attitudes and procedures which are capable of being used by all persons who act intelligently is born in mind." (Page lw.13.272).

3.4. Common sense and scientific investigation

In this part of the essay, Dewey finds it necessary to point out that human experiences do not necessarily have a scientific or an educational outcome. With regard to the educational outcome, in his *Experience and Education*, Dewey stressed the need for experiences to form a continuum and activate growth paths through the interaction of the individual with the human and natural context.

Dewey dedicates the fourth chapter of his *Logic* to stressing that experience cannot be limited to the dimension of common sense but must acquire a scientific depth. The cultural nature of human experience means that the solutions found from time to time by an individual or a social group end up taking on a regulatory character. However, this is a knowledge that has often failed to pass the scrutiny of the scientific investigation. Common sense collects the flow of experiences and beliefs. It is that knowledge that often consolidates itself in the proverbs related to the modalities of action or in the beliefs relating to abstaining or taking up food. For Dewey, therefore, the discontinuity between common sense and science lies not so much in the way of dealing with the processes of knowledge, but in the attitudes that in the common sense risk, in some cases, to attribute a greater consistency to the experiences by making use of metaphysical elements.

However, Dewey again pushes in the direction of building continuity:

"(1) Scientific subject-matter and procedures grow out of the direct problems and methods of common sense, of practical uses and enjoyments, (Page lw.12.72) and (2) react into the latter in a way that enormously refines, expands and liberates the contents and the agencies at the disposal of common sense."

The continuity, even if it is desirable, is substantially made difficult by the condition of asymmetry and perhaps by language problems, what Dewey notes is that "The paths of communication between common sense and science are as yet largely one-way lanes. Science takes its departure from common sense, but the return road into common sense is devious and blocked by existing social conditions." (Page lw.12.83).

We can use one of Manzoni's aphorisms: "Good sense was there, but it was hidden for fear of common sense" to highlight how this non-return poses serious problems to social coexistence. It is in the common sense that the attitude of opposing to progress and science exists, the attitude which to some extent is the basis of all restorations.

In his *Encyclopedia*, Dewey tries to emphasize the fact that the scientific attitude is not only the prerogative of scientists, but is also available to all men who work in an intelligent way: "There are those who work by routine, by casual cut-and-try methods, those who are enslaved to dogma and directed by prejudice, just as there are those who use their hands, eyes, and ears to gain knowledge of whatever comes their way and use whatever brains they have to extract meaning from what they observe." (Page lw.13.272).

3.5. Pure science and applied science

Dewey then proceeds to question the distinction between pure science and applied science. The scope of this passage is more difficult to understand nowadays [3]. At present, pure research risks

[3] In fact, as Israel (2003) affirms, the balance between pure science and applied science has gradually transformed itself into a dominance of applied research, favoring applicative and technological aspects to the detriment of pure research and using the utility criterion as the only reference.

seeing its role challenged by a policy that favors the financing of technological applications. However, in the traditional hierarchy of knowledge, the important sciences, those able to produce solid knowledge, to formulate laws and theories, in short, the scientific sciences, were evidently mathematics, physics, and natural sciences. Therefore, the contrast between "exact" and "less exact" sciences is part of the tradition, up to the point of doubting that the less exact ones can even be considered sciences.

Dewey appeals to the role of engineers and their contribution to the development of knowledge and technology. Engineers actually make their products through calculations that are

> "Just as demanding as those that produce the so-called 'pure' science and test their hypotheses in the same way as 'exact' science researchers. However, engineers only serve as pioneers. And if the engineer is mentioned, it is because, once he is admitted, we cannot exclude the farmer, the mechanic, and the chauffeur, as far as these men do what they have to do with intelligent choice of means and with intelligent adaptation of means to ends, instead of in dependence upon routine and guess work. On the other hand, it is quite possible for the scientist to be quite unscientific in forming his beliefs outside his special subject, as he does whenever he permits such beliefs to be dictated by unexamined premises accepted traditionally or caught up out of the surrounding social atmosphere." (Page lw.13.273) [4].

3.6. The scientific attitude

Dewey at this point defines the scientific attitude starting from a definition by negation, from what the scientific attitude is, to then define it in positive terms. The text is of such richness that it is worth presenting it in its entirety.

> "In short, the scientific attitude as here conceived is a quality that is manifested in any walk of life. What, then, is it? On its negative side,

[4] DEWEY, J. (1938). Unity of Science as a Social Problem (Page lw.13.273), in L.A. Hickman (Ed.). (1996), *The Later Works of John Dewey,* 1925-1953, vol. 13, 1938-1939, The Electronic Edition, Charlottesville, Va.: InteLex Corp., 271-285.

> it is freedom from control by routine, prejudice, dogma, unexamined tradition, sheer self-interest. Positively, it is the will to inquire, to examine, to discriminate, to draw conclusions only on the basis of evidence after taking pains to gather all available evidence. It is the intention to reach beliefs, and to test those that are entertained, on the basis of observed fact, recognizing also that facts are without meaning save as they point to ideas. It is, in turn, the experimental attitude which recognizes that while ideas are necessary to deal with facts, yet they are working hypotheses to be tested by the consequences they produce." (Page lw.13.273) [5].

In this passage, we can find definitions of both the emotional and operational dimension of this attitude, by means of the Galilean model of the relationship between theory and evidence. Dewey also enriches it with a connotation of style that appears both in the definition by negation in terms of freedom from habit and prejudice, and in the positive definition in the dimension of desire and in the ability to "take the time" to gather all the possible evidence.

> "The unity of science is essentially a unity of scientific attitude, an intelligent and critical attitude that can and must be expressed in everyday life no less than in technical activity and specialized research; no collaboration between scientists or science theorists can be truly fruitful, if they do not first feel the responsibility of this necessary extension of the scientific attitude to the fields of practical activity mortgaged by religions, morals and political and economic institutions, if not they tend to realize it in the common life associated, as freedom from the enslavement to mechanical routine, to prejudice, to dogmas, to non-screened tradition, to mere personal interest." [6]

Above all, it is the attitude that is rooted in the problems are posed and in the questions that are raised by the conditions of the context. The unscientific attitude is that which escapes this kind of problems, which moves away from them or hides instead of facing

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[5] DEWEY, J. (1938). Unity of Science as a Social Problem (Page lw.13.273), in L.A. Hickman (Ed.). (1996), *The Later Works of John Dewey,* 1925-1953, vol. 13, 1938-1939, The Electronic Edition, Charlottesville, Va.: InteLex Corp., 271-285.

[6] VISALBERGHI, A. (1949). Prefazione del traduttore. In J. Dewey, *Logica, teoria dell'indagine*. Torino: Einaudi.

them. And experience shows us that this evasion is complementary to the interest in artificial problems and desired solutions. All the problems that do not arise, even indirectly, from those conditions in which life is determined, including social experience, are artificial. Life is a process that takes place in relation to a complex environment, both from a physical and a cultural point of view. There is no form of interaction with the physical environment and the human environment that does not generate problems that can be handled in any other way but with an objective attitude and an intelligent method. The house, the school, the shop and the hospital present these problems with the same precision as in the laboratory. Indeed, these situations present problems more directly and urgently. This is so obvious that it would be useless to remember it for any other reason but for the fact that it demonstrates the potential universality of the scientific attitude.

> "The existence of artificial problems is also an undeniable fact in human history. The existence of such problems and the expenditure of energy upon the solution of them are the chief reasons (Page lw.13.274) why the potentiality of scientific method is so often unrealized and frustrated. The word 'metaphysics' has many meanings, all of which are generally supposed to be so highly technical as to be of no interest to the man in the street. But in the sense that 'metaphysical' means that which is outside of experience, over and beyond it, all human beings are metaphysical when they occupy themselves with problems which do not rise out of experience and for which solutions are sought outside experience. Men are metaphysical not only in technical philosophy but in many of their beliefs and habits of thought in religion, morals, and politics. The waste of energy that results is serious enough. But this is slight compared with that which is wrought by artificial problems and solutions in preventing, deflecting, and distorting the development of the scientific attitude which is the proper career of intelligence." (Page lw.13.274) [7]

[7] DEWEY, J. (1938). Unity of Science as a Social Problem (Page lw.13.274), in L.A. Hickman (Ed.). (1996), *The Later Works of John Dewey,* 1925-1953, vol. 13, 1938-1939, The Electronic Edition, Charlottesville, Va.: InteLex Corp., 271-285.

After defining the characteristics of science, Dewey goes on to address the second topic of his essay, namely, the units of science that can be realized. The argumentation scheme remains linked to the premises placed in the first chapter. The problem is the same: the consideration of the two aspects of science in terms of process (attitude and method) and in terms of product (knowledge and notions). The results of science, understood as acquisitions sufficiently justified to be taken in a normative way, are of such large dimensions and concern such a high number of contexts and aspects that it is difficult to think they can be coordinated in a systematic whole. As regards the unity of knowledge, I believe it is worth adding that the humanity tends to dream, from time to time, in relation to the amount of knowledge it manages to acquire, that it can transform science into a means of political control. From the Prometheus *techné*, to language and writing, and, nowadays, to computers and big data, these dreams constantly clash both with the difficulty of gathering the results of human experiences and with finding the models to interpret them correctly. Dewey, to some extent, implies that he has doubts about a solution that would reduce the problem to technical or language aspects, about the idea that the unity of science is achievable through the reduction of the complexity of knowledge through the adoption of methodological principles and language of physics.

For this reason, Dewey again shifts the attention to the process, and to the human and cultural meaning of the unity of science. He then returns to the fundamental dimension of the scientific attitude and poses it as a decisive question, addressing first and foremost the "experts": scientists and researchers. He believes that the first step to take is for the scientists to assume the responsibility of confronting each other in an open way and thus, as a community, become capable of enriching itself with the strength that comes from the union.

But the unity of scientists is also difficult because there are important interests that act against a unified vision of the scientific community. At the time, Dewey experienced a profound disappointment with respect to the American democratic dream that had inspired Democracy and education, and was personally looking for a third way, believing that the American democracy is subservient to capitalist interests and that these, together with

religious, nationalist and racial prejudices, also prevent the peaceful confrontation within the scientific community. "Seen in this light, the problem of the unity of science constitutes a social problem of fundamental importance".

As a matter of fact, the prestige of science risks being confined to its practical applications to industry and war. To some extent here an ethical problem emerges and remains fundamental for the understanding of Deweyan thought. The condemnation of the use of science in industry and for war does not, in fact, rest on a moral condemnation related to external principles, but on the conviction that only a democratic approach can maximize the reach of work and science. And yet, Dewey clearly expresses a concern about the use of science against the scientific attitude.

"Men may admire science, for example,because it gives them the radio to use, and then employ the radio to create conditions that prevent the development of the scientific attitude in the most important fields of human activity—fields which suffer terribly because of failure to use scientific method." (Page lw.13.275).

A highly contemporary consideration if one thinks about the effects of the use of first television, and then the Internet as well, not for the dissemination of knowledge as it would be intrinsic to its potential, but for social control of consumption and ideas.

From this point of view, it is precisely the active collaboration of scientists that becomes a priority and that "transcends in importance the more technical problem of unification of the results of the special sciences" (Page lw.13.275).

To a certain extent, Dewey proposes an urgent need for a great cooperative movement in favor of the unity of science, without stopping to look for a common basis on which to seek consensus, and again proposes that the cooperative method be assumed without prejudice, without claiming that in order to form it, it is possible to first begin to work together on preliminary agreements or common assumptions: "To try to formulate them in advance and insist upon their acceptance by all is both to obstruct cooperation and to be false to the scientific spirit. The only thing necessary in the form of agreement is faith in the scientific attitude and faith in the human and social importance of its maintenance and expansion." (Page lw.13.275).

The difficulties are obviously many and arise from the diversity of experiences and languages, as well as from the specialization of knowledge Dewey states that: "The attempt to secure unity by defining the terms of all the sciences in terms of some one science is doomed in advance to defeat." (Page lw.13.276).

Therefore, the task is not to reduce and simplify but to "build bridges between one science and another".

Besides the fact that this seems, above all, the definition of a purpose, Dewey does not, however, avoid a methodological indication that also seems very contemporary and suggests a path that links the physico-chemical sciences with the area of social psychological sciences, through the mediation of biology.

The cooperative commitment is, therefore, proposed as an end to the movement for the unity of science, also with an idea of clarifying how bridges can be built on the chasms that still separate those who work in different fields.

Finally, Dewey associates an increase in tolerance with the progress of the scientific method but he also reveals that the context in which he writes is marked by a progressive growth of intolerance.

And he concludes this chapter with a call for mobilization: "We need a shift from acceptance of responsibility for passive toleration to active responsibility for promoting the extension of scientific method. The first step is to recognize the responsibility for furthering mutual understanding and free communication." (Page lw.13.277).

The historical moment of this text makes the appeal even more dramatic. Dewey states that if this project could not be realized, science "would see the fruits of its own victories made by those who would use them with anti-scientific methods and for inhuman purposes".

However, while Dewey was writing, the world was preparing for the second massacre, in which the applications of science were about to play a leading role and our scientists would end up having to line up for one or the other side. And if what Heisenberg and Bohr said in the Nazi-occupied Copenhagen a few years later, in 1941, remains a mystery that is well represented in the theatrical narrative of Michael Frayn, it is true, however, that scientists found the strength to fight against the use of nuclear energy only after it was experimented on the cities of Hiroshima and Nagasaki.

3.7. Education and Unity of Science

Dewey's text ends with an entire chapter dedicated to the survey of an intervention in the school system. The school is, in fact, the battleground where the supporters of traditional, authoritarian and anti-scientific models confront and at the same time oppose those who believe it is possible to train young people to have a correct scientific attitude.

Dewey also points out that, in the crisis of this historical moment, both the ultra-reactionary (fascist, Nazi, capitalist laws) and the ultra-radical (communists and socialists), while formally recognizing the prestige of science in some sectors, they are all allies in using the very techniques of science to destroy the scientific attitude.

The arrival of the sciences in schools, as Dewey recalls, is relatively recent, but the school, however, remains dominated by "other disciplines, which have barely felt the touch of science".

What it essentially claims is that the sciences in schools not only have a space that is still substantially smaller than the one of the humanities, but that they are taught (like the latter) with traditional and authoritarian methods. In essence, what happens is the teaching of notions on the basis of the principle of authority and not the experimentation of the method and the scientific attitude.

What is actually necessary is an active teaching of sciences starting from elementary school.

"Yet this is the time when curiosity is most awake, the interest in observation the least dulled, and desire for new experiences most active. It is also the period in which the fundamental attitudes are formed which control, subconsciously if not consciously, later attitudes and methods." (Page lw.13.278).

In fact, in most schools, however, we continue to teach a set of contents that is a result of the knowledge produced by science, but it is taught as notions, as data supported by the authority of the teachers who present them to young people. In this case, even when the use of active forms of teaching such as laboratories are used, it is done only as a means of transferring information sets instead of as a method of approaching reality, they risk being part of the normal school routine and contributing little to the development of scientific thought.

Dewey also disputes the fact that most of the resources are directed to a professional preparation that risks not being so much a preparation for the application of applied science, but a mere training in the use of certain procedures. They are actually aimed at a specialization that limits the ability of a scientific attitude in all aspects of human experience.

From this point of view, the battle for the unity of science and the battle to make schools active end up having a common educational purpose: the one of opposing the confinement of science in its closed space and alienating it from social and political debate.

For Dewey, therefore, it is necessary that the whole movement for the unity of science to consider the issue of education of young people to be central: "the future of scientific attitude as a socially unified force depends more on the education of children and young people than on any other single power".

The damage of the use of school as an instrument of ideological propaganda is severe not only if we observe what in those years happened in central Europe, but also considering the obscurantist attitude of many of the private schools in the United States.

This situation needs to be opposed by the whole team of supporters of the unity of science through an active cooperation which starts from the awareness of the importance of the scientific attitude.

Considering this, Dewey summarizes his answer to the second question he asked at the beginning of the essay: to what extent the unity of science is feasible and desirable.

> "It is neither feasible nor desirable that all human beings should become practitioners of a special science. But it is intensely desirable and under certain conditions practicable that all human beings become scientific in their attitudes: genuinely intelligent in their ways of thinking and acting. It is practicable because all normal persons have the potential germs which make this result possible. It is desirable because this attitude forms the sole ultimate alternative to prejudice, dogma, authority, and coercive force exercised in behalf of some special interest. Those who are concerned with science in its more technical meaning are obviously those who should take the lead

by cooperation with one another in bringing home to all the inherent universality of scientific method." [8]

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4. Educational research: planning and methods

Guido Benvenuto

Research is an instrument of knowledge: for those who prepare it and those who benefit from it.

In this contribution, although in a summary, we want to describe the process of planning and the methodological organization of research in the educational field. In the first place, one must ask what research in general means, then reflect it on the reference paradigms that shape the research, make a reference plan (in the form of dimensions and/or phases that each researcher considers in the planning and development of research) and finally outline the styles and types of tools for the detection and construction of research "data".

4.1. General characteristics of a research

The research serves to discover and understand what was previously unknown or to throw a new light on problems or issues. In its various forms, the research leads to deepen themes, verify hypotheses, discover new solutions, characteristics or dimensions, more analytically understand aspects or phenomena, experiment interventions, test points of view and positions, measure and evaluate specific realities. Doing research helps to enrich different fields of knowledge of empirical evidence, contributing in general to the scientific debate.

But what are the general characteristics of a search? A search must be systematic and deliberate, in the sense of having a clear,

structured and intentional organization to gather new information or shed new light on problematic situations; a research must try to give answers or at least aim to deepen the understanding of issues of interest, through the use of valid techniques and reliable, objective or intersubjective tools; a research must, in any case, be able to justify the choice of the methods used, the methods for collecting data and analysis carried out.

We emphasize again the different characteristics in doing research, at least in the sense that we will resume and explain in this text. A research therefore becomes or can be considered a cognitive tool provided that it is a systematic, explicit, intentional, logical investigation.

Research is systematic, because each is organized and follows precise methodological paths and defined data collection strategies to improve the understanding of the issues investigated; it is explicit, because it must make its structure, the choices in theories − which guide the questions or hypotheses − the strategies that regulate the methods of investigation, and the tools that allow to collect data on the research themes,manifest and communicable; it is intentional or deliberate because every research arises from real and authentic problems and aims precisely at understanding these problems, experimenting with practices, justifying innovations or transformations, developing investigations to better intervene in different fields of knowledge; it is logic, because in all its possible forms a research always adopts an argumentative form that can justify the choices made and the methods of analysis and interpretation adopted.

The strength of doing research within any professional and scientific community lies in sharing the theoretical and operational choices and in the dissemination of the achieved results. Making research, in short, is a process of knowledge and enrichment of knowledge as it leads to comparison. It pushes to the choice and the comparison precisely through those principles, strategies and instruments to arrive at better understanding certain fields of knowledge, a better intervention in certain contexts and professional sectors, the reflection on professionalism and allows to contribute within the scientific community, indicating the procedures and methods used in our research.

What differentiates the various researches in the different fields of knowledge are obviously the different realities and phenomena to be investigated and the specificity of the methods that can be employed.

This text aims to introduce a discussion on the method related to the different research methods widely used in the educational field, cutting out the specific sector of empirical research in education. The exemplification of research will serve to analyze the specificities and differences in research styles, methods and tools, highlighting the methodological level, that is the reflection on the many choices and the different strategies that conducting research implies.

Based on the specific knowledge needs of educational facts, several educational research families can be developed:

a) pure (basic) or even theoretical/speculative research, which seeks new knowledge, and develops theories; investigates the general purpose and dimensions of knowledge; it has a strong exploratory and prospective characterization as it is proposed to discuss the existing reference systems to conceive new ones; this research is typical of the philosophy of education and general pedagogy;
b) historical and comparative research, which investigates the genesis and development of ideas and educational actions in the dual perspective of time, typical of the history of education, and of the differences between cultures and geographical, political, social contexts, to embrace the intercultural pedagogy and comparative education;
c) applied or empirical research, which aims to give answers to the problems encountered in the educational professions, to prepare interventions aimed at change; it aims to verify the most effective methods, to face the modalities and the instruments of the educational action, collecting different types of "data" on the field through different methodologies (narrative, descriptive, experimental). The character of empiricism is given by acting directly on the field. In the pedagogical field, researches are developed with approaches that aim at describing educational contexts and environments (descriptive research) or involving intervention (research-action), or forms of experimentation (experimental or technological research) or level/standard surveys (evaluative or operational research); for these types of research,

refer to the disciplinary sectors of teaching and experimental pedagogy.

Empirical research in education therefore aims to collect data and information on the field, in situations, in factual contexts and in everyday reality. On those occasions when we find ourselves wanting to better understand, think about certain problematic situations, reflect on how to change or clarify some aspects of intervention and act on educational aspects, we arrange ourselves with the researcher's attitude to better organize that understanding, that research reasoning, that reflection, that analysis of intervention. If the areas concern education in general, there are different themes of empirical research, which focus on field survey and intervention in professional contexts: the different forms and levels of learning (degree and differences in learning), individual (individual performance), of groups (group performance); of the structure as a whole, as in the case of school (school performance); the educational relationship (educational and interpersonal relationships); the dimensions and contexts in which these processes are developed, as in the case of school organization; the professional resources involved in these processes and their training (teacher competences, strategies, training); the general development of the person and of the personality in different educational environments (attitude, behavior, personal traits).

This text on the research methodology in the field of education arises from the reflections made with many students during some university courses. Presenting the forms and methods of research in the various areas of pedagogical intervention has served both students to orient themselves in the variety of research in the educational field, and the author, to organize the courses and to better discuss the functions, purposes and methods of pedagogical research and reflection. Conducting educational research means dealing with the issues and problems that educational facts place at the center of some professions. And with the verb "to deal with" here, we intend to understand, analyze, intervene, reflect on professional actions. In order to develop a deeper understanding of educational facts, to analyze specific contexts and dynamics, to conduct targeted actions and interventions, to profitably reflect on

behaviors, innovations and experiences on the field, attitudes and approaches typical of cognitive inquiry and research are needed. Research is therefore a way of approaching the profession itself, a professional action.

The educational research is based on the centrality of the educational sciences as pedagogical means, on that knowledge and those cognitive tools that can be obtained, as Dewey pointed out, from what we can define the different "sources" of pedagogy: sociology, psychology, anthropology, philosophy, history, to be limited to the social sciences. This means, to be used for the study of "educational facts", is pedagogical knowledge, necessary to deal with the dimensions and characteristics of the individual and the environment in which he lives and finds himself acting. The cognitive and methodological expertise of those who do research in the field of education, allows them to work well in the various professions and fields of intervention, to understand and be able to intervene in more targeted and controlled forms and modalities through cognitive research, experimentation, monitoring and field surveys.

If methods that will be illustrated under an operational profile are to be considered as tools for professional action and used in real contexts, in contingent situations, it will be necessary to think about how the chosen methods are used and how to monitor their use. The methodology is precisely the reflective discourse on how to choose and handle the methods, on how to increase and cultivate a research attitude, on how to operate with awareness and reasoning. While the method plan refers to the knowledge of the main investigative tools, the methodology plan concerns the appropriate reflection on their use and awareness in the action that develops.

It is good to clarify from the outset, that doing research in a specific area, in a scientific area, in a context of practices, is affected by the degree of structure and knowledge in that field, studies and research developed in different historical periods and different cultures, and is conditioned by the scientific paradigm and by cultural hegemonies (strength and social consensus) present at a given historical moment. That is why taking care of doing research in the educational field implies the reference to the epistemological status that pedagogy and the educational sciences have reached, to

the debates on their theoretical purpose, practices and fields of interest.

However, it is good to limit the areas and the aim of the volume, to their objectives and organization. As Dewey (1929) had well seen, pedagogy cannot and will never connote itself with "scientific" dimensions in the same way as other fields of knowledge, such as for mathematics or physics. The insurmountable difference between these fields of knowledge consists in the necessary and explicit practical nature that education involves. Many attentions and educational questions concern the ways and potentialities that human beings have in learning, and how to adapt environments, didactic approaches, relationships to the potential of individuals.

Educational facts basically concern human beings and their development, evolution, and formation. At most, taking up the reflections of Dewey, one could speak of practical science and, therefore, talk about pedagogical science that leans, for its cognitive and operational action, on other sciences that can help support the analysis and study of educational facts. According to Dewey, these are the sciences of education, such as psychology, sociology, anthropology, linguistics, cognitive science, neuroscience and many others can make theoretical and research instruments to understand and intervene in educational facts.

The complexity of educational knowledge has to do with evolutionary theories and empirical practices. This does not mean that we cannot do research in the educational field, far from it, but we must not forget the complexity of educational facts. While isolating specific aspects to be investigated, it becomes essential to acquire tools and methods, respecting the specificity of contexts and areas and trying to explore, analyse and understand them without interrupting or modifying their natural evolution. This substantial difference means that the methods of investigation and research in the educational field assume different degrees of "intrusiveness" and "manipulation" depending on the type of goal and specificity.

The degree of "scientificity" of educational research therefore depends on the meaning given to the scientific method. Every researcher and scholar knows well that the motivations that drive the research interest arise from professional action, from the need to understand and intervene on their own and others' experiences, but

to develop cognitive investigations, we are forced to isolate concepts, identify and select certain aspects to be investigated, specify or exclude the elements to be considered, in short, to choose and declare dimensions of analysis or intervention. All this makes the field of action of educational research of a more fragile constitution, but of primary interest for those who deal with educational professions, which will take it into account and remember it.

In this perspective, to illustrate theories, research styles and tools, useful for the development and reflection of empirical research in the field of education, the volume refers to many manuals for research and methods in education offered by international literature. Their aim and breadth are a useful reference for all in-depth analysis and reflection on scientific paradigms.

To present and discuss the different dimensions that lead to empirical research in the field of education, the volume plan provides a structure that accompanies the topic of methods to a methodological reflection. The two sides, the operational one (for the organization of the plan and style of research), and the reflective one (aimed at increasing the degree of awareness and reflection of the professional "educator") will be intertwined in the course of the discussion and will refer to a series of in-depth studies and on-line examples, to carry out independent and group analysis and reflection activities.

4.2. Multiparadigmatic approach in educational research

The multiparadigmatic approach is well connected to the educational field, and therefore to the phenomena that pertain to pedagogical reflection. In the schematization offered by Cohen, Manion & Morrison (2011, see Fig. 4.1) we can identify three large paradigmatic blocks that summarise three different conceptual structures for conducting research in the educational field:

1) the quantitative one is a vision that tends to objectify reality and methods of investigation; it develops through surveys that establish and test hypotheses with an experimental approach and therefore lead to planning experiments aimed at controlling the variables involved and measuring the effects of any interventions (treatments). This conceptual structure refers to an idea of science

and of a normative, deterministic, positivistic scientific approach that wants to "explain" phenomena through quantitative techniques and analysis by means of variables;

2) the qualitative one is a vision that aims at seeing reality from the subjective (internal) point of view of those who experience it, with the eyes of those who live the reality under investigation. Hence the methods of investigation are more oriented to the analysis of relationships and contexts (interactionist, humanistic, phenomenological, existential), intervention (action-research), located on the field (naturalistic, ethnographic), and the tools of analysis are more observational. This conceptual structure refers to an idea of science and of an interpretative scientific approach, which wants to "understand" phenomena by studying the different meanings that people provide (constructivism), analyzing precisely the differences between people and groups (relativism), through qualitative techniques and case analysis;
3) the critical-participatory theory explains an inevitable and necessary interdependence between the researcher and the object studied, between the investigators and the investigated. Both in the choice of the themes, in the will to intervene on the studied realities, and in the participation in the context and reality studied, a natural trans-action between researcher and research object is affirmed.

The need to study and participate in socio-educational issues arises precisely from the need to deal with those contexts that require more forms of socio-educational intervention. Thus, the problems of cultural and social disadvantage are highlighted, the forms of oppression, discomfort, underdevelopment, which can affect individuals or social groups at a local and global level. The participatory research therefore aims to criticize the ideologies, the organizational-institutional forms that determine relationships of power, to improve the individual conditions but also, and perhaps above all, of groups, communities and societies. The optic of intervention and study at action is prevalent, aimed at criticizing the contexts that generate imbalances and at developing participatory forms of intervention and research, in the name of the ideals of equity and the contrast of inequalities.

The scheme with the three research paradigms (and the discourse is particularly valid for the educational field) closes with a precise indication of synthesis: the mixed methods answer perhaps more usefully to the multifactorial nature and complexity of the educational facts. Above all, in the pedagogical area, in social psychology and more generally in the social sciences, more and more frequently mixed research models are adopted. The aim is often to integrate exploratory and descriptive phases of a more naturalistic nature and which refer to an interpretative approach, with phases of possible comparative evaluation, longitudinal (over time) or the search for standards (normative or criteria), experimental and positivist.

The two positions, interpretive and positivist antagonists of the ontological and epistemological point of view, find in the mixed methodology a reason of cohabitation, aimed at understanding and analyzing the different facets and complexities of educational facts. The two positions can be considered two visions and points of view, a double glance: internal to the processes, which takes into consideration the interaction between the researcher and the sought; external or objective/normative processes that can be used in certain phases of pedagogical research; that is, when we can and want to create distance from the object of study, when we want to relate it to some pre-established unit of measure, when we can or we want to abstract from individual variables.

Mixed methods seem to be the optimal reference model for developing researches of a natural complexity such as those involving educational facts in pedagogical contexts. In fact, they can combine phases of possible "positivist" investigation, with observations, actions and interventions aimed at change, which instead require a greater "interpretive" and "critical" approach. When the research aims to intervene on the reality that studies, at the same time, it is the interaction (and the transactions) to be studied and we resort to forms and approaches qualitative increases. When, on the other hand, the research objective can be that of detecting from the outside, assuming a possible non-interference with the object of study, it is precisely the distance between the researcher and the object of study that makes it possible to resort to more objective forms and approaches.

In the mixed method then "the researcher collects and analyzes data, integrates discoveries and draws inferences using both quantitative and qualitative approaches and methods in a single search or in a multi-research program" (Tashakkori, A., Creswell, J.W., 2007, p. 293). The researcher who opts for a mixed method is placed on multiple research plans, tries to solve problems that refer to a contextual complexity (see Tashakkori, A., Teddlie, C., 2009, p. 294) and exploits the potential of two methods, qualitative and quantitative. The former uses techniques for describing situations and/or narrating events, the latter using measuring techniques to collect data. Thus, combining informal and statistical approaches, mixed methods point to a methodological pluralism that distinguishes pedagogical research (Baldacci, 2012, p.99).

Each research is called to develop three levels of choice, as Guba and Lincoln (1994) have brilliantly synthesized: ontological (why researching), epistemological (what to look for), methodological (how to search); on the other hand it discusses the different paradigms in the research, in the light of the updates proposed by Heron and Reason (1997).

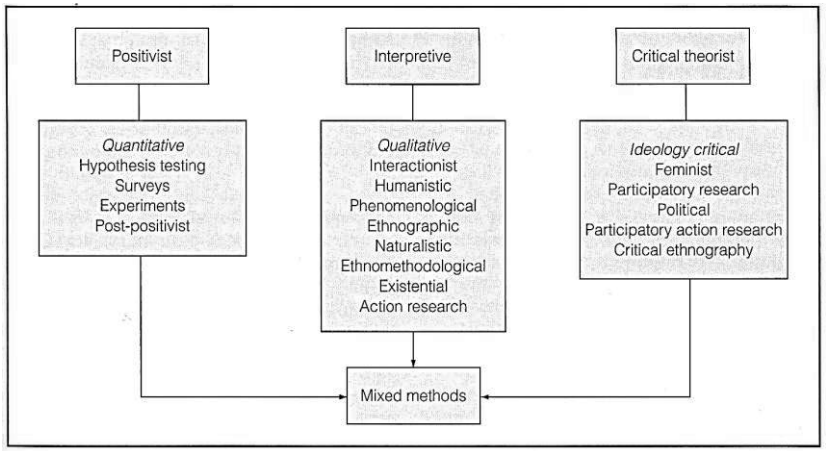

Fig. 4.1. Positivist, interpretative and critical paradigms in educational research (Source: Cohen, Manion & Morrison, 2011, p. 47).

4.3. Research planning: from questions/hypotheses to research style

The various reflective frames outlined so far, help to organically develop the design phase of doing research in the educational field.

The choices that a researcher has to make are listed and presented in the scheme shown in the chapter Appendix. In the composition of the general outline of the various steps to be followed in doing research, we have obviously been forced to generalize with respect to the specificity of the different research styles, which will be detailed in the following chapter, just to provide an overview of the theoretical-operative phases expected, as many industry manuals propose at international level. The scheme (see diagram in the Appendix, translated into three languages: Steps/phases of research in education) is an adaptation of the one presented in Cohen, Manion, Morrison (2011).

The research design scheme follows and develops some simple questions that should accompany the different phases:

a) what is the ideation and the epistemological orientation at the base of the research?
b) how to make research possible and with which methodological style?
c) how to select recipients and analyze data?
d) how to present and communicate the results?

Central is the phase of operationalization (point 6 of the scheme in the Appendix), which requires to clarify the questions to which the research wants to respond or the hypothesis that it intends to verify. The different formulation explicitly refers to the type of general approach, to the operative style that the research chooses to follow (point 8 of the scheme). Often the questions refer to more exploratory and descriptive approaches, while the hypotheses to more experimental research models and to study relationships between variables.

Operationalization is therefore a very important step, as it forces the researcher to move from theory to research design. It leads to the translation of theories into operational propositions of empirical controllability, that is, from theoretical propositions to specific

hypotheses. Corbetta (1999, p. 86) well defines the hypothesis as a "proposition that implies a relation between two or more concepts, which is placed on a lower level of abstraction and generality with respect to the theory and which allows a translation of the theory into empirically controllable terms". The difference between hypotheses and research questions is evident. In the case of research hypotheses, possible relationships between variables or phenomena are envisaged; in the case of research questions, questions often are general or open to direct research.

As regards the style of research, six approaches or research styles can be identified: ethnographic, case analysis, action research, survey, experiment, and measurement. By research style we mean the organizational model, the overall system that characterizes a research. Obviously, the complexity of a research or the different phases that compose it can integrate the different styles and propose mixed research plans based on the complexity and intention of research. We present below the different approaches separately, alongside a possible continuum of qualitative/quantitative research paradigm as distinct in the epistemological and methodological coordinates followed, and, consequently, in the use of different tools for data collection, or with specific forms and modalities. For an accurate presentation and in-depth analysis of the different research styles in the educational field, see Benvenuto (2015).

- Ethnographic study: (reconstruction of paths, conditions, personal stories, to understand the motivations and the formation of certain positions or meanings, description and analysis in depth of specific situations with specific attention to the perception and points of view of the involved subjects).
- Case study: when we want to analyze and interpret a specific situation, individual, group, roles, organizations, communities. To know in an analytical and more detailed way a situation, a professional reality, a specific context such as a school or a class.
- Research-action: when one wants to follow and understand a certain educational process, to know how to intervene. The purpose is to identify and describe the processes and lines of action to solve or intervene didactically, operationally and practically in specific contexts.

- Survey research: survey of an observational/descriptive or social sample, to investigate the existence and intensity of the relationships between variables, there is no manipulation (treatment) of the independent variables, rather the empirical survey of actions or certain dimensions reached at social level (from groups or individuals) in terms of opinions, scores, results, conditions, rankings, often in relation to certain background variables.
- Experiment: when we can identify cause-effect relationships, and check context variables and threats to external/internal validity. Research by experiment aims to test hypotheses and aims to explain, to provide causal explanations, to understand determinants.
- Measurement research: studying factor relationships, performing tests and measurements, defining standards and establishing standards. The purpose here is to record in reliable forms certain cognitive, affective, process, performance, and service variables to calculate the variability and establish average levels.

4.4. Techniques and tools for data collection

The choice and use of tools for detection often arises as one of the first steps in the design and implementation of research. But following the operative scheme, previously presented in detail, we considered the "definition of the research tools" as the next step for the choices of an epistemological and methodological nature, necessary to identify the style of research and to make the overall design work. This underlines that the identification of the type of instruments to be used in research is the natural consequence of the choices made in terms of aims and styles of research.

When selecting a specific technique and detection tool, the specific phase in which it is used should also be considered. Within a research, it is then possible to articulate several phases and then integrate different styles and methodologies, as in the case of mixed approaches. The styles most aimed at the understanding and interpretation of facts and educational contexts can provide tools for observation and narration of experiences, and among the different forms of observation one can choose the most appropriate one for the

reference sample or analysis group, then taking into consideration the functionality in relation to the available resources. Choosing a type of participant observation, which is part of the interpretative paradigm, the choice will probably derive from the need to develop research, which helps to read from the inside on the field some dimensions and reality, foreseeing a prolonged and intentional involvement of the researcher (teacher). Think of ethnographic surveys or some case studies, and especially research-action, that are research styles that make involvement and participation a qualifying and determining point of knowledge and above all carry out research in specific areas and socio-educational contexts.

On the other hand, in the case of research styles that aim at describing, reconstructing and analyzing specific contexts or social groups, it might be essential to combine techniques and tools for more comparative surveying, with others offering a perspective of dialogic and introspective detection. Here, the choice could be oriented to tools such as the questionnaire with structured questions, to be associated with individual interview forms with pre-arranged or freer schedules, or group as in the case of focus groups, or towards more narrative forms (diaries, life stories).

Conversely, when the styles are oriented towards more measurable and experimental purposes, the researcher is more conditioned in the choice of instruments with a high degree of structuring, such as objective tests (closed answer), questionnaires with closed questions and scaling techniques, fully structured observation, through pre-defined formats such as check-lists, or completely structured interview types.

The researcher while designing and setting up a research, an investigation or a cognitive study, decides the tools for data collection depending on his problem and need of knowledge, and not vice versa. It would be preferable to articulate the discourse following the prevailing purposes in the use of tools, rather than individually presenting the types of instruments. Besides, the prevailing goals in data collection are relatively few: observing, asking, telling and measuring (see. Fig. 4.2; cfr. Benvenuto, 2015; Trinchero, 2002).

The first and most direct forms to understand social and educational phenomena are observing and asking questions.

Observing and questioning are by far, the most immediate instruments, though they require a lot of attention in the collection and coding phase as the result of an action conducted by subjects and are therefore subject to possible distortions and interpretations. Hence, we are in some cases talking about detection phases of a more qualitative nature, as in participant observation, in others of forms of observation that try to build uniform criteria to allow comparative surveys, such as for check-lists or rating-scales.

In the case of asking questions, you can have more dialogic and open forms of interviews, which aim at a low degree of structuring, to be used both in the individual form (face to face) and collective, as in the case of focus groups, and more objective forms, as in self-filled questionnaires in which there are more structured and formulated written questions. The forms of qualitative interview are presented in the paragraph "to interview", those more structured instead in the paragraph "to measure", precisely to underline their different form and function.

This substantial difference between qualitative interviews and more structured interviews still has a common problem: take into account that the same question can be formulated in various ways and above all, be subject to different interpretations by respondents. Lazarsfeld (1935) in his famous article "The Art of Asking Why", was one of the first to question about the different principles to be considered in the formulation of the questions. By addressing a social research field interested in surveys and market analysis, which aim to detect the point of view of individuals and groups, his purpose was to improve questionnaires used for surveys and interview techniques. His reflection starts from the observation that "a question is never the same if formulated to different people", as they can interpret it.

> "We take a simple question such as why a person bought a certain brand of coffee. A respondent can answer because he likes the taste, and another because a neighbor told him about that brand. The two respondents interpret our question of 'why' in two different ways. One thinks that we are mainly interested in the characteristics of coffee, the other that we are interested in the possible external

influences on their choice. The answers, therefore, are not comparable".[1]

Alongside the analysis of the main techniques and tools for direct observation and the interview, we wanted to investigate the growing and functional use in surveys and research in the field of technologies and tools for audio/video-recording and multimedia. In addition to the use of video-recordings and audio-recordings for the analysis of contexts, interactions, communications and all those central process dimensions for the understanding and interpretation of psycho-educational realities, more and more researchers in the educational field, in research ethnographic and anthropological, are using films, photographs, figures, drawings, artistic objects, moving images, television broadcasts, maps, illustrations, graphic representations, artifacts and so on. The use of audio-visual and data-visual techniques helps to integrate and triangulate the data collected with other techniques.

Besides observing and asking, the typical instruments of the most narrative approaches are presented, offering the possibility of producing texts of a discursive and reconstructive nature, subjectively relevant to describe one's point of view (autobiographies), to narrate experiences or episodes (stories of life), annotate elements along a chronological axis (on board diaries), reflect on situations, determinant aspects or problems of different order (description of observational relationships, narrative analyzes, ethnographic notes, reflective reflections of focus groups), but also document the educational action by integrating paper forms and multimedia texts (blog and digital storytelling).

When the cognitive purpose is instead aimed at quantification, surveying on large or representative groups of subjects, comparing reality or confirming hypotheses, we are directed towards the instrumentation that allows us to collect quantitative data. These are techniques and tools to measure that point to a more structured data

[1] LAZARSFELD, P. (1935). The Art of Asking WHY in Marketing Research: Three Principles Underlying the Formulation of Questionnaires. *National Marketing Review,* 1 (1935): 26-38, republished in Lazarsfeld, P. (1972). *Qualitative Analysis*, p. 27. Boston: Allyn & Bacon.

collection such as self-compiled questionnaires, which propose the same questions in writing to avoid distortions that even the most trained interviewer could not avoid, but above all the technique of testing and evaluation scales are used. The construction of reliable stimuli that allow a valid measurement of psychological constructs (see aptitude tests, personalities, projectives, sociometrics etc. with the related psychometric problems), constructs related to school learning (see test of profit, and structured/semi-tests) structured for skill with the related assessment problems), tend to more controlled, if not objective, forms of detection. Much bibliography now exists on the techniques for the construction of questionnaires and testing, in the various areas of interest and related to psychological, sociological and pedagogical variables. Consider that for the evaluation of scholastic learning in the international field, the first assessment publications date back to the beginning of the last century, and, in Italy, in the early 50s with the pioneering study of Visalberghi (1955).

Observing	• *Systematic Observation* • *Observation grids, - Check-lists* • *Evaluation scales (rating-scales)* • *Category systems* • *Observation not systematic or experiential* • *Diaries (logbook)* • *Audio-video recordings* • *Technique of critical anecdotal episodes (anectodal records)*
Asking (query)	• *Self-compiled questionnaire* • *Telephone questionnaire or through other media* • *Face to face interview*
Telling	• *Autobiographies* • *Life stories* • *Board logs* • *Description of observational relationships* • *Narrative analysis* • *Ethnographic notes* • *Reflective accounts of focus groups* • *Blog and digital storytelling*
Measuring	• *Testing* • *The self-completed questionnaire* • *The scaling technique*

Fig. 4.2. Techniques and tools according to the purpose of data collection.

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Appendix: Steps/phases of research in education

STEP 1

L'orientamento epistemologico della ricerca
Epistemological research's paradigms
Эпистемологическая направленность исследований

	SCHEMA DELLE FASI DELLA RICERCA IN EDUCAZIONE	STEPS/PHASES OF RESEARCH IN EDUCATION	ЭТАПЫ ПРОВЕДЕНИЯ НАУЧНО-ИССЛЕДОВАТЕЛЬСКОЙ РАБОТЫ В ОБЛАСТИ ОБРАЗОВАНИЯ
1.	*Definire in modo chiaro il problema (il bisogno) da cui nasce la ricerca.*	*Statement of the problem/ what gave rise to the research*	*Определение проблемы (что послужило поводом для начала исследования)*
2.	*Riflettere sulla natura del fenomeno da investigare per chiarirne le dimensioni ontologiche ed epistemologiche*	*Nature of the phenomena to be investigated*	*Природа исследуемого феномена для выяснения его онто – и - эпистемологического характера*
3.	*Possedere una buona letteratura sul tema per garantire la validità di costrutto e di contenuto*	*Grounding in literature*	*Поиск информации по данному вопросу в литературе чтобы была гарантия о надёжности содержания и конструкта*
4.	*Dichiarare i limiti (condizioni) della ricerca (ad esempio di disponibilità, tempo, persone, politiche)*	*Constraints on the research (e.g. access, time, people, politics)*	*Определение рамок исследования (доступность, время, люди, политика)*
5.	*Specificare le finalità e gli scopi della ricerca*	*Aims and purposes*	*Цели и задачи*
6.	*Operazionalizzare le finalità e scopi della ricerca: generare le domande o ipotesi di ricerca*	*Operationalizing research aims and purposes: research questions*	*Практическая реализация целей и задач для получения основной гипотезы исследования*
7.	*Identificare i risultati attesi dalla ricerca*	*Identify the results expected from the research*	*Определение ожидаемых результатов исследования*

STEP 2

Progettazione della ricerca e metodologia
Research design and methodology
Планирование исследования и методология

SCHEMA DELLE FASI DELLA RICERCA IN EDUCAZIONE		STEPS/PHASES OF RESEARCH IN EDUCATION	ЭТАПЫ ПРОВЕДЕНИЯ НАУЧНО-ИССЛЕДОВАТЕЛЬСКОЙ РАБОТЫ В ОБЛАСТИ ОБРАЗОВАНИЯ
8.	*Definire la metodologia/tipo di ricerca (approcci e stili di ricerca: etnografica, analisi di caso, ricerca-azione, survey, esperimento, misurativa etc.)*	*Methodology of research (approaches and styles)*	*Методология научно-исследовательской работы (подходы и стили, этнографический, анализ случая,анализ деятельности, измерения)*
9.	*Articolare e ordinare le priorità della ricerca, descrivendo il disegno di ricerca (in generale)*	*Priorities for the research and approaching the research design*	*Приоритеты исследования и выбор подхода для его проектирования*
10.	*Esplicitare le problematiche etiche e le questioni proprietarie dei risultati e dei dati (ad esempio: il consenso informato; ricerche dichiarate o sotto tutela; anonimato e segretezza; non-tracciabilità; non-dannosità; diritti preservati/lesi; validità degli intervistati; soggetti della ricerca; responsabilità sociale; onestà e inganno)*	*Ethical issues and ownership of the research*	*Вопросы этики и авторского права в рамках исследовательской работы, кем владетель результатов и данных, (соглащение, анонимность, отсутствие повреждения, надёжность интервю, участников в исследовании, социальная ответственность, доверие и обманъ)*
11.	*Dichiarare i principi e le posizioni politiche della ricerca (chi è/sono i ricercatori; appartenenza istituzionale; vantaggi di potere e di interessi; ricerca interna/esterna)*	*Politics of the research*	*Политическая важность исследования (кем исследователь, из какого источника, доходы и преимущества)*

12.	*Identificare il pubblico di destinazione della ricerca*	*Audiences of the research*	*Целевая аудитория и цель исследования*
13.	*Definire gli strumenti della ricerca (ad esempio questionari; interviste; osservazione; tests; note sul campo; resoconti; documenti; costrutti personali; gioco di ruolo)*	*Instrumentation*	*Инструментарий (опросники, интервью, наблюдение, тесты, отчеты, документы, ролевая игра, личностные конструкты)*
14.	*Disegnare/scegliere il piano di campionamento (ampiezza/disponibilità/ rappresentatività; tipo; probabilistico: casuale, sistematico, stratificato, a grappolo, a stadi, multi-fase; non probabilistico: di convenienza/accidentale, per quote, di scopo; dimensionale, a catena)*	*Sampling*	*Выборочный контроль: отбор выборочного плана (множество, состав, доступность, репрезентативность;типология: вероятностная, случайная, поэтапная, невероятная, целевая, цепная и.т.д.)*
15.	*Effettuare una prova sul campo/un pilotaggio*	*Piloting*	*Проведение пилотажного полевого эксперимента*
16.	*Articolare il disegno di ricerca (in dettaglio) Pianificare i tempi e le sequenze/fasi (cosa succederà, quando e con chi)*	*Time frames and sequence*	*Детализация плана научно-исследовательской работы. Определение временных границ и последовательности действий*
17.	*Prevedere il piano delle risorse richieste*	*Resources requests*	*Определение требующихся ресурсов*
18.	*Controllare l'attendibilità e validità*	*Reliability and validity*	*Контроль надёжности и валидности*

STEP 3

Analisi dati e diffusione dei risultati della ricerca Data analysis and dissemination of research results Анализ данных и расспространение полученных результатов			
	SCHEMA DELLE FASI DELLA RICERCA IN EDUCAZIONE	STEPS/PHASES OF RESEARCH IN EDUCATION	ЭТАПЫ ПРОВЕДЕНИЯ НАУЧНО-ИССЛЕДОВАТЕЛЬСКОЙ РАБОТЫ В ОБЛАСТИ ОБРАЗОВАНИЯ
19.	*Predisporre un piano di analisi dei dati (quantitativi e qualitativi)*	*Data analysis,*	*Подготовка плана для количественного и качественного анализа данных*
20.	*Verifica, validazione e interpretazione dei dati*	*Verifying/ validating data and their interpretation*	*Проверка достоверности и интерпретация данных*
21.	*Preparare la documentazione e rapporti di ricerca per la diffusione dei risultati*	*Reporting/writing up the research*	*Подготовка документации и написание отчета по научно-исследовательской работе и для их распространения*

Fig. 4.3. Techniques and tools according to the purpose of data collection. Fonte: Traduzione e adattamento da L. Cohen, L. Manion, & K. Morrison, *Research Methods in Education*, London & New York: Routledge, 2011 (7th ed., p. 118).

5. Il metodo per la diagnosi del pensiero sistemico dei bambini negli studi sulle attività educative incrementali, o maggioranti (*razvivajuščie*)

Viktor Aleksandrovič Guruzhapov

Da oltre 10 anni la Università Psicopedagogica di Mosca (MGPPU, Russia) e la Sapienza Università di Roma collaborano alla formazione di docenti in pedagogia e scienze educative. In larga misura, questa cooperazione è dovuta agli interessi reciproci dei ricercatori russi e italiani nel campo dell'istruzione. I colleghi romani hanno interesse per le idee della psicologia storico-culturale e l'approccio attivo nell'istruzione, sostenuto da L.S. Vygotskij e dai suoi seguaci. (Veggetti, 2010, 2017). Per il versante russo, rappresentato dal personale del Dipartimento di Psicologia Educativa della Facoltà di Psicologia dell'Istruzione, assume particolare importanza l'organizzazione della ricerca educativa, che si sta sviluppando nel Dipartimento di Psicologia dei Processi di Sviluppo e Socializzazione. In primo luogo, la parte russa era interessata a discipline come la pedagogia sperimentale, la metodologia della ricerca pedagogica, la psicologia generale dell'istruzione. Noi, psicologi russi, siamo stati arricchiti dalla conoscenza del modo in cui i colleghi romani mettono in pratica le idee di J. Dewey sull'integrazione di diverse scienze nell'analisi della situazione attuale nell'istruzione e del ruolo delle pratiche educative basate su sperimentazioni. Ciò si è riflesso sul fatto che abbiamo cominciato a prestare maggiore attenzione alla pratica di argomenti orientati nella ricerca dei nostri studenti universitari magistrali, alla predisposizione di studi sperimentali pertinenti, tra cui la dimensione del campione attendibile per le possibili applicazioni pratiche dei risultati della ricerca.

Questo lavoro è un esempio di come la nostra comunicazione con i nostri colleghi italiani abbia trovato una continuazione nella posizione e nella soluzione di un problema specifico nel campo della ricerca educativa di tipo incrementale.

La storia di queste ricerche in Russia è piuttosto ampia, evidenziata negli scritti di V.V. Davydov e dei suoi seguaci (Davydov, 1972, 1996). Si sono prese in considerazione le possibilità di sviluppo di varie forme di istruzione nelle discipline accademiche ben consolidate all'interno dei programmi di istruzione generale primaria come la matematica, la lingua russa nativa, le scienze naturali. Allo stesso tempo, recentemente, sono diventati rilevanti gli obiettivi di valutare l'efficacia dell'apprendimento dei bambini nella risoluzione di problemi di nuovo tipo, vale a dire di carattere: economico, progettuale, scacchistico e simili. Tali obiettivi hanno anche contenuti teorici e, al fine di valutare l'efficacia delle pratiche educative pertinenti, richiedono strumenti di ricerca selezionati con precisione.

Nel discutere i progetti di ricerca dei laureandi russi relativi all'uso dell'esperimento formativo, i professori Pietro Lucisano, Maria Serena Veggetti, Guido Benvenuto e altri colleghi romani hanno ripetutamente sollevato la questione di come comparare gruppi sperimentali e di controllo in base al livello iniziale del possesso dei fondamenti del pensiero teorico.

L'uso di metodi tradizionali per diagnosticare lo sviluppo del pensiero dei bambini in questo caso è limitato, in quanto questi valutano principalmente il livello di sviluppo del pensiero empirico (consapevolezza intellettuale, capacità di classificazione di oggetti). Ecco perché abbiamo rivolto l'attenzione ai metodi di valutazione dello sviluppo del pensiero sistemico.

Secondo V.V. Rubtsov e I.V. Rivina (1985), il pensiero sistemico è definito come la capacità di un bambino di:

- Analizzare l'oggetto come un sistema di elementi correlati ed evidenziare il principio generale della costruzione di questo sistema;
- Progettare un nuovo sistema di elementi basato sul principio presentato.

N.I. Polivanova e I.V. Rivina hanno ideato diversi metodi di ricerca per valutare il livello di sviluppo del pensiero sistemico dei bambini dell'età di 6-9 anni (Polivanova, Rivina, 1996, 2007). Gli studi sperimentali hanno dimostrato una validità sufficiente di questi metodi. Hanno evidenziato che il pensiero sistemico è un fenomeno dalla struttura multicomposita inerente a diverse forme di istruzione e, soprattutto per noi, può servire come strumento per determinare il livello di sviluppo dei bambini formatisi in contesti diversi di istruzione. (Polivanova, Rivina, et al., 1999). Ma queste tecniche sono state progettate per l'esame individuale dei bambini. Questo rende difficile il loro uso per la ricerca su grandi campioni di soggetti. Di conseguenza, è sorto il seguente compito: creare un pacchetto diagnostico compatto basato su metodi di ricerca empirica per valutare il livello di sviluppo del pensiero sistemico dei bambini, da attuare nel lavoro di gruppo autonomo degli studenti.

Abbiamo ipotizzato che almeno uno dei metodi di N.I. Polyvanova e I.V. Rivina, vale a dire: "Completa questo insieme", potesse essere utilizzato per la diagnosi di gruppo del livello iniziale di sviluppo del pensiero sistemico dei bambini di 7-8 anni (studenti del primo grado dell'istruzione primaria russa) quando avessero già imparato a leggere. Questa ipotesi è stata in parte confermata nell'ambito della ricerca di A.I. Nikitina e D.D. Tsybenova per la laurea magistrale, svoltasi sotto la nostra guida (Nikitina, 2018; Tsybenova, 2018).

Consideriamo i risultati di questa indagine.

V.A. Guruzhapov e D.D. Tsybenova hanno sviluppato istruzioni per i conduttori e i soggetti della prova, nonché forme di preparazione e compiti di base. Tutti e 8 i compiti di N.I. Polyvanova e I.V. Rivina, diversi per il numero di caratteristiche significative (da 1 a 4): forma, colore, dimensione, posizione (posizione della figura), che definiscono il principio della struttura del sistema, sono stati completamente conservati. I lavori si differenziano in base al grado dell'evidenza degli elementi del sistema da sottoporre ad analisi. La natura dell'ubicazione e il numero di elementi nel sistema in tutti i problemi sono gli stessi. A differenza della nota tecnica di J. Raven in questi compiti si propongono non solo forme geometriche, ma anche immagini schematiche di animali e persone, il che aggiunge ai compiti un elemento di orientamento nella variabilità del mondo.

Ecco alcuni esempi di problemi formativi preliminari per due compiti principali.

Esempi di : «Completa questo insieme».

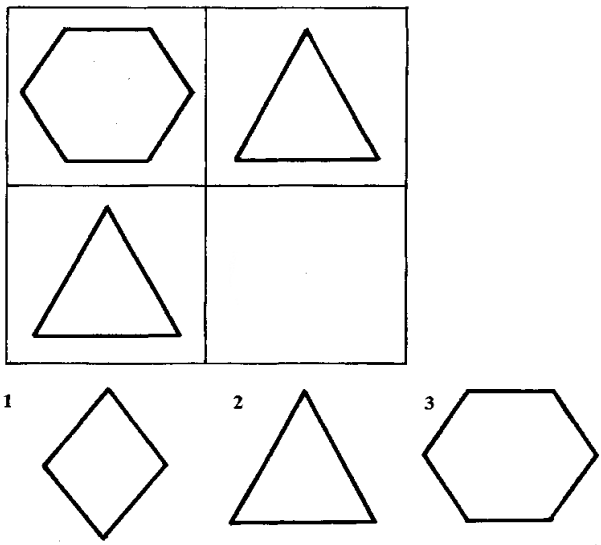
Cognome_____ Nome_____ Età___Data_____

Scuola_____№___Classe_____Residenza_____

Problema formativo preliminare

Guarda attentamente le due serie di figure nel quadrato disegnato qui sotto. Nella disposizione delle figure nelle celle c'è una regola comune. Ma una delle celle è vuota. Dunque il sistema non è completo.

Sotto al quadrato sono disegnate tre figure diverse, ognuna con un suo numero. Quale figura è necessario mettere nel quadrato vuoto per completare il sistema? La regola deve essere conservata. Scrivi nella cella vuota il numero della figura!

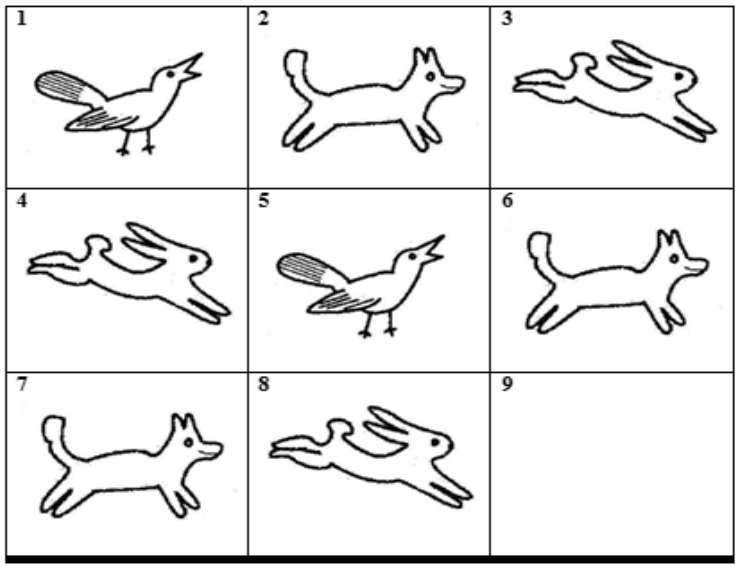


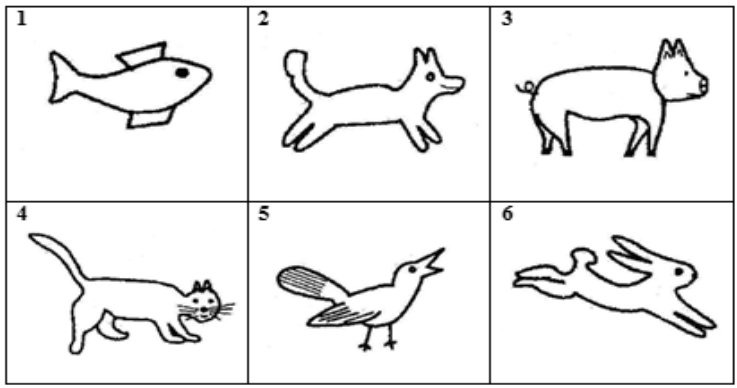
Soluzione. Nella fila superiore orizzontale del quadrato ci sono un esagono e un triangolo. In quella inferiore c'è solo un triangolo. Dunque manca l'esagono. Nella cella vuota bisogna mettere il numero 3. Gli altri compiti sono più difficili.

Compito №2

Guarda attentamente le 3 serie di figure nel riquadro disegnato qui sotto. Nella disposizione delle figure nelle celle c'è una regola comune. Ma una delle celle è vuota. Dunque, il sistema non è completo.

Sotto al primo riquadro sono disegnate 6 figure diverse, ognuna con un suo numero. Quale figura è necessario mettere nella cella vuota per rispettare la regola? Scrivi nella cella vuota il numero della figura.

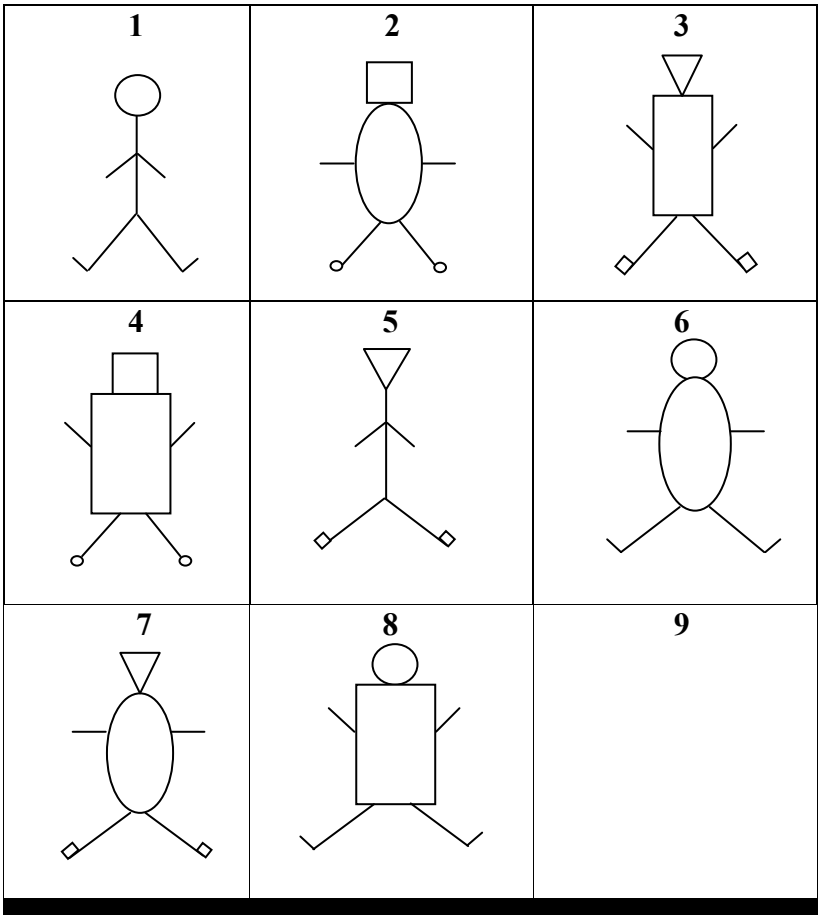


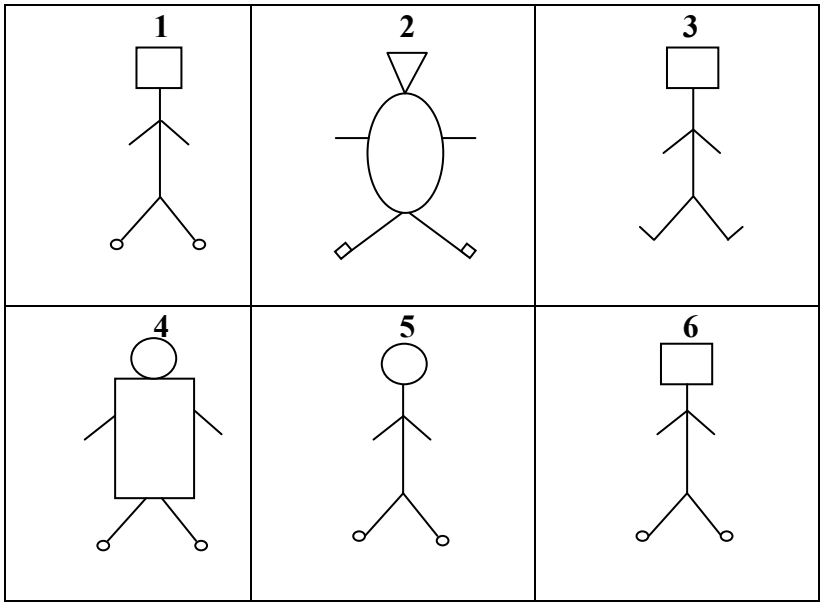


Compito №8

Guarda attentamente le 3 serie di figure nel quadrato disegnato qui sotto. Nella disposizione delle figure nelle celle c'è una regola comune. Ma una delle celle è vuota. Dunque il sistema non è completo.

Di seguito sono disegnate 6 figure diverse, ognuna con un suo numero. Quale figura è necessario mettere nella cella vuota per rispettare la regola? Scrivi nella cella vuota il numero della figura.





Il compito preliminare è necessario perchè i bambini capiscano il significato del termine "sistema" in relazione ai compiti principali. Diamo un'occhiata alla differenza tra i lavori 2 e 8 nella complessità della loro soluzione. L'attività 2 è abbastanza semplice. È sufficiente che il soggetto capisca come sono formate un certo numero di forme in ogni linea della tabella, vale a dire in una riga tutte le forme sono diverse. L'attività 8 è molto più complicata. Il soggetto deve capire non solo come sono formate un certo numero di figure schematiche di una persona in ogni linea della tabella, ma anche valutare la forma della testa, del busto, delle gambe, delle posizioni delle mani.

C'era il timore che gli studenti della prima classe non avrebbero capito il significato del termine sistema. Ma in un esperimento pilota con un numero limitato di soggetti si è scoperto che capiscono il significato del termine all'interno di questi compiti.

A. Nikitina e D.D. Tsybenova hanno testato la tecnica diagnostica in un esperimento di gruppo con studenti di prima elementare in due scuole di Mosca. Una delle scuole ("N") si trova in una zona d'élite della città. È caratterizzata dalla selezione di studenti con un alto livello di preparazione per la scolarizzazione, così come elevate esigenze per i risultati educativi. La seconda scuola ("M") si trova in un'area di insediamento di massa. È caratterizzata da un basso livello

di preparazione dei bambini per la scuola, così come da un livello mediocre di esigenze nei confronti dei risultati educativi.

Presso la scuola "N" sono state testate 8 prime classi per un totale di 248 studenti. Le classi sono state suddivise in modo casuale in due gruppi. I dati relativi all'esito positivo della soluzione per la prova "Completa questo insieme" sono riportati nella tabella 5.1.

Risultati dello svolgimento		
№ PROVA	GRUPPO №1 (4 CLASSI - 124 SCOLARI)	GRUPPO №2 (4 CLASSI - 124 SCOLARI)
1	*95 (77%)*	*97 (78%)*
2	*97 (78%)*	*97 (78%)*
3	*82 (66%)*	*76 (61%)*
4	*87 (70%)*	*97 (78%)*
5	*83 (67%)*	*89 (72%)*
6	*75 (61%)*	*74 (60%)*
7	*63 (51%)*	*62 (50%)*
8	*49 (40%)*	*45 (36%)*

Tabella 5.1. Dati della soluzione dei discenti di I classe dei due gruppi della scuola «N» (% arrotondate all'intero). (Numero gradi di libertà 7. Significatività al $\chi 2$ 1.158. Valore critico del $\chi 2$ per un livello di significatività pari a $p<0.05$ di 14.067. Il nesso tra risultati e livelli non è statisticamente significativo, livello di significatività $p>0.05$).

Pertanto, i gruppi erano uguali nello sviluppo del pensiero sistemico. A.I. Nikitina nella sua ricerca magistrale ha testato il rapporto della capacità di risolvere i problemi della tecnica con la capacità di risolvere i problemi degli scacchi per i bambini di questa età. Questo è stato possibile, in quanto tutti gli scolari seguono corsi di scacchi a scuola. È stata trovata una correlazione positiva. Questo ha permesso un esperimento formativo per migliorare l'apprendimento degli scacchi. Il Gruppo 1 è stato selezionato come gruppo sperimentale e il Gruppo 2 come gruppo di controllo. La scuola "M" ha anche testato quattro prime elementari, il Gruppo 3. I

dati comparativi delle indagini del Gruppo 1 e del Gruppo 3 sono presentati nella successiva tabella 5.2.

Risultati delle soluzioni		
№ PROVE	GRUPPO №1 (4 CLASSI SCUOLA «N» - 124 SCOLARI)	GRUPPO №3 (4 CLASSI SCUOLA «M» - 115 SCOLARI)
1	*95 (77%)*	*92 (80%)*
2	*97 (78%)*	*85 (74%)*
3	*82 (66%)*	*56 (49%)*
4	*87 (70%)*	*32 (28%)*
5	*83 (67%)*	*31 (27%)*
6	*75 (61%)*	*1 (1%)*
7	*63 (51%)*	*7 (6%)*
8	*49 (40%)*	*0 (0%)*

Tabella 5.2. Dati comparati delle soluzioni degli scolari della prima classe della scuola N e della scuola M (% arrotondate all'intero). Gradi di libertà 7. Significatività del $\chi 2$ pari a 128.559. Significatività del $\chi 2$ per $p=0.01$ pari a 18.475. Il nesso tra risultati e livelli è statisticamente significativo, livello di significatività $p<0.01$.

In conclusione, nel corso del nostro esperimento, si è trovata evidenza del fatto che il metodo di diagnosi del pensiero sistemico dei bambini "Completamento dell'insieme" di Polivanova N.I. e Rivina I.V., originariamente destinato all'esame individuale, può essere utilizzato per valutare il pensiero sistemico dei bambini di età compresa tra 7 e 8 anni nella variante modificata per quelli che possono leggere. La versione modificata manterrà le funzionalità diagnostiche di base del metodo Polyvanova N.I. e Rivina I.V. Possono essere esaminati rapidamente grandi gruppi di soggetti e i dati possono essere utilizzati per egualizzare la linea di partenza dei gruppi sperimentali e di controllo nell'esperimento di tipo formativo.

Ci sono due importanti aree di lavoro per migliorare la versione modificata della tecnica "Completamento dell'insieme".

In primo luogo, è possibile tradurre le prove in un modulo multimediale, quando le istruzioni per i soggetti del test sono date a voce. In questo caso, i soggetti possono risolvere i problemi durante le ore di computer. Sarà possibile eliminare la condizione della capacità di leggere e offrire problemi a bambini di sei anni. Sarà anche possibile determinare automaticamente il tasso di successo integrale di ogni soggetto del test.

In secondo luogo, è possibile verificare come saranno risolti i problemi dei bambini più grandi, vale a dire in età di 9 anni. Sarà quindi possibile ottenere dati sugli standard evolutivi del pensiero sistemico dei bambini dai 6 ai 9 anni.

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6. Researches of the Russian master's degree students studying in joint master's degree program of Sapienza University of Rome and Moscow State University of Psychology and Education

Dimitry Lubovsky

Studies conducted by Russian undergraduate students studying at the joint master's degree programme "Education of students" of Sapienza University of Rome and the Moscow State University of Psychology and Education, are characterized by a focus on solving the problems of modern education and they are practically oriented. Professors of the Moscow State University of Psychology and Education, assisting students in the selection of research topics for master's theses, help them choose topics that are relevant in the context of not only Russian education, but also global trends in education. It should be noted the diversity of the subjects of student work ranging from special education to research on gender aspects of general abilities. The theoretical basis of the work became: J. Dewey's philosophy of education, cultural and historical theory of L.S. Vygotskij, modern theories of intelligence. Professors of the Moscow State University of Psychology and Education place high demands on the theoretical validity, correctness of the methodology and to the validity of conclusions. This article provides examples of researches performed by students under the supervision of the author. All of them are relevant in the context of modern education, many can be continued as cross-cultural studies or as practice-oriented developments.

Anna Khrushch had studied in the master thesis, the possibility of formation of communicative competence of adolescents with dysgraphia and dyslexia in speech therapy work with speech disorders. The aim of the research was to study the influence of

speech therapy on the formation of communicative competence and on the reduction of communicative anxiety in adolescents with dysgraphia and dyslexia. The subject of the study was the change of communicative competence in adolescents with dysgraphia and dyslexia in the process of speech disorders therapy. The hypothesis of the study was the assumption that the development of communicative competences in speech therapy, supplemented by a block of communicative exercises, reduces the level of anxiety in communication in adolescents with writing disorders (dysgraphia, dyslexia).

The study involved 30 adolescents aged 12-13 years, with dysgraphia and dyslexia. The study used the technique of an estimation of writing skills (I.N. Sadovnikova, 1997); Standardized technique for the study of reading skills – SMIN (A.N. Kornev, 2003); test communicative skills (L. Mikhelson, the Russian version by Y.Z. Gilbukh, 1998); the anxiety questionnaire (A.M. Prikhozhan, 2007a). The experimental study was conducted in three stages from September 2013 to March 2014. At the first stage (primary diagnosis), the state of writing and reading skills was studied for the purpose of differential diagnosis of the type of dysgraphia, dyslexia, as well as the study of the level of formation of communicative competences and the level of personal anxiety.

The second stage was a series of experimental lessons in which the method of speech therapy for the correction of dysgraphia and dyslexia was supplemented by exercises simulating the situation of communication and aiming at the development of the main components of communicative competence – emotional, cognitive, behavioral. This program of speech therapy not only improved the quality of the writing and reading, but also formed communicative competence and reduced anxiety in adolescents with dysgraphia, dyslexia. 20 sessions were conducted with each participant of the study, in which the methodology of speech therapy was supplemented with exercises for the development of communicative competence.

In the third stage of the study, the retest of writing skills, reading skills, communication skills and anxiety was carried out. These techniques were accomplished in the same order as at the first stage of the study. The data analysis of the first stage of the study showed

that all subjects make errors that can be qualified as dysgraphic. In the study sample three types of dysgraphia were identified: acoustic, dysgraphia based on violations of linguistic analysis and synthesis and grammatical dysgraphia. A decline of indicators both technical and semantic components of reading was identified in the group of adolescents with acoustic form of dysgraphia; in the group of adolescents with dysgraphia based on violations of linguistic analysis and synthesis recorded higher levels of development of reading skills; adolescents with grammatical dysgraphia showed very low indicators for the technical component of reading aloud.

In the study of communicative competence and quality of basic communicative skill levels in adolescents with dysgraphia, dyslexia showed a significant predominance of aggressive and dependent responses. In the experimental group as a whole, the predominance of dependence in communication was revealed in 13 adolescents (43% of the subjects), the predominance of aggressiveness in communication was also noted in 13 adolescents (43%), the predominance of competence in communication - in 4 adolescents (14%), which leads to the conclusion that the majority of adolescents prefer dependent and aggressive communication styles or communicative strategies. The connection between the form of written speech disorders and the type of communicative style is noted. So, 33% of adolescents with dyslexia and dysgraphia, because of the language analysis and synthesis disorders, demonstrated the competent communicative style, whereas between adolescents with another forms of dyslexia and dysgraphia this style is not indicated. In the group of adolescents with dyslexia and acoustic dysgraphia predominant communicative style is dependent, in the group of adolescents with dyslexia and grammatical dysgraphia it is aggressive. The results of the anxiety study showed that adolescents with dyslexia and dysgraphia have a very high level of personal anxiety. In almost all adolescents, the maximum indicators were recorded on the sub-scale of interpersonal anxiety, which reflects the high degree of tension of communicative interaction in adolescents with writing disorders.

Analysis of retest results showed that the balance of errors typical for acoustic dysgraphia, dysgraphia based on linguistic analysis and synthesis disorders and grammatical dysgraphia was still existing,

but the number of errors decreased. The level of formation of technical and semantic components of reading skills has increased. The technical component of reading aloud developed according to the age norms in 19 adolescents (63%), the technical component of reading about themselves – in 15 subjects (50%); the semantic component of reading aloud – in 25 adolescents (83%); the understanding of the text read to oneself without difficulties is noted in adolescents 17 (57%).

As a result of work in 11 teenagers (37%) it is possible to talk about overcoming dyslexia. Retest using the L. Michelson's test of communicative competence showed that the performance of competent communicative style was significantly increased (χ^2=20,389, p=0.001). The experimental group showed a decrease in school anxiety, self-esteem anxiety and interpersonal anxiety; the decrease in interpersonal anxiety went from 8.3 to 5.3 (W=4.785, p=0.001). Thus, the study showed that speech therapy works in combination with exercises aimed at the development of communicative competence, has an impact not only on the level of development of writing skills, but also on the formation of communicative competencies and leads to a decrease in anxiety in communication in adolescents with dysgraphia and dyslexia.

The research of Oksana Stashina was focused on an empirical study of the student's internal position in different models of education. The philosophic basis of the study were the theoretical foundations on educational experience, proposed in J. Dewey's works on the philosophy of education. The problem of the study was defining the characteristics of the personality of the student in different systems of education. The key concept of the study that is the notion of the student's internal position was introduced by the outstanding Russian psychologist L.I. Bozhovich, a follower of L.S. Vygotskij, and represents the subjectivity (agency) of the student, as depicted in his mind. The ideas about the student's internal position formulated by L.I. Bozhovich (1968/2008) are close to the foundations of the self-determination theory by E. Deci and R. Ryan (2012).

The study was conducted in two stages, in February 2014 and February 2015. 72 schoolchildren aged 10-11 years participated in the study, 70 of them participated in the second stage. 27 of them (25 at the second stage) are studying at school following the programme of

personality-oriented education (the model of school education, similar with principles of the humanistic education by C. Rogers). 23 pupils were trained under the program of developing training on V.V. Davydov (the concept of education, close to J. Dewey's principles of philosophy of education, where the priority is the development of theoretical thinking), 22 students were studied in the traditional programme of General education. The subject of the study was the process of development of the student's internal position in the conditions of personality-oriented, developmental and traditional education. The hypothesis of the study was the assumption about the specifics of the student's internal position in the conditions of personality-oriented, developmental and traditional education.

The study used a projective technique of unfinished sentences (the evaluation of emotional aspects of learning), questionnaire "Diagnostics of learning motivation" by C.D. Spielberger, modified by A.M. Prikhozhan and the Readiness for self-development questionnaire by A.M. Prikhozhan (2007b). The observation of children at school brakes, in the classroom and structured interview with class teachers were also used. The data of the first stage of the study showed that schoolchildren studying in the conditions of developing education have the highest rate of tendency to self-development (χ^2=10,98; p=0,004). There has been a trend towards a higher level of anxiety in the school of developmental education compared to the school of personality-oriented education, but the differences have not reached the level of significance. According to the projective technique "Unfinished sentences", the most positive attitude towards the school, manifested in an emotionally positive attitude towards teachers and teaching, as observed in group 1 (school of personality-oriented education). The ratio of responses to the proposal "When I get a deuce..." shows that students educated by traditional school programme attitudes towards failure in school are not too constructive (χ^2=22,006, p=0,015).

A follow-up survey of the sample, conducted one year later, confirmed the trends identified at the first stage. As at the early stage of the study, there were no significant differences between the groups in terms of learning motivation and emotional attitude to teaching, but in the conditions of developing education adolescents had a tendency to reach a higher level of cognitive motivation and

achievement motivation. Again, there is a tendency for a higher level of anxiety in the school of developmental education compared to the school of personality-oriented learning, but the differences have not reached the level of significance.

The projective technique "Unfinished sentences" revealed inter-group differences mainly in the same sentences as in the first stage. Thus, significant differences were found in the responses to the sentence "When I see a teacher..." (χ^2=13,452, p=0,036). According to the results, the meeting with the teacher is colored with positive emotions and creates a businesslike attitude among students of schools of personality-oriented and developmental education; only in the conditions of an ordinary school, fear is revealed when meeting with teachers. Answers to the sentence "When I get a bad score…" also have significant differences between the groups (χ^2=18,061; p=0,021). The ratio of the responses indicated that a more positive mindset towards learning expressed in schools with personality-oriented and developmental education. A much higher level of frustration and resentment was found in students of ordinary school. According to the distribution of answers to the sentence "I would be very happy if I ..." can be seen that students in schools of personality-oriented and developmental education stress as field of interest, as in the first place school and learning, the group no. 3 on the contrary, evidentiates increasing importance for life and interests outside the school, usually associated with the satisfaction of material needs ("Would be happy if...", "...bought iPad", "... would find 1000000 ruble" etc.). In general, the study showed that the student's internal position in the conditions of personality-oriented, developmental education and training in ordinary school programs, has specific features. The most positive attitude to school, emotionally positive attitude to teachers and positive mindset towards learning was indicated in the situation of personality-oriented education. Students have no significant differences in cognitive motivation and achievement motivation in situations of personality-oriented, developmental education and education by traditional school programmes.

At the same time, the level of the tendency to self-development in the conditions of developing education is slightly higher than in the conditions of personality-oriented training. The lowest level of the

tendency to self-development is at school with traditional school programmes. In the transition from the fifth to the sixth grade, there are trends indicating a successful adaptation to secondary school. Adolescents in all three groups had an attitude towards school as a place of communication with friends, while the initial differences in indicators on different aspects of the student's internal position are mainly the same.

An important task of modern psychology is the studying of children and adolescents' emotional intelligence. The social situation of development (the concept introduced by L.S. Vygotskij), as the system of relations between a child or a teenager with their environment, is significantly different from the one in the past, because the communication of modern adolescents is mediated by social networks. Julia Kochetova's research was focused on the features of social intelligence of older adolescents aged 15 – 16 years. Based on the cultural-historical theory of the unity of affection and intelligence, the relationship between emotional intelligence and academic success of older adolescents was hypothesized.

The gender features of emotional intelligence of older adolescents in connection with their academic success were the object of the study. The theoretical basis of the study was the cultural and historical theory of L.S. Vygotskij (the principle of the unity of affect and intelligence), structural and dynamic theory of intelligence by D.V. Ushakov (2003), the study of emotional intelligence (D. Goleman etc., 2002; J. Meyer, P. Salovey etc., 2004; N. Hall, 2007; etc.) and gender theories (E. Maccoby, S. Bem etc.) 386 adolescents aged 15 – 16 years (184 boys and 202 girls) took part in this study. S. Bem's questionnaire of gender identity, emotional intelligence test "EmIn" (D.V. Lyusin, 2004) and N. Hall's (2007) test of emotional intelligence evaluation were used in this research. To assess the academic success, the average scores in the class journal were used.

The study of gender identity showed that in the sample of girls the most common type of gender identity is femininity (76%), and in the sample of boys – masculinity (67%). The results of the emotional intelligence study on the questionnaire "EmIn" are presented in table 6.1.

The overall level of emotional intelligence is significantly higher for girls than for boys. Significant differences between girls and boys

were revealed in all indicators of emotional intelligence. Attention is drawn to the higher level of understanding and management of other people's emotions in girls and higher rates of understanding their emotions, control their emotions and control of expression in boys. Data of the N. Hall's test of emotional intelligence are presented in table 6.2.

	UNDERSTAN-DING OTHER PEOPLE'S EMOTIONS	CONTROL-LING OTHER PEOPLE'S EMOTIONS	UNDERSTAN-DING OWN EMOTIONS	CONTROL-LING OWN EMOTIONS	CONTROLLING EXPRESSION	GENERAL INDEX
Girls	*30,60*	*23,70*	*12,78*	*8,46*	*7,99*	*83,55*
Boys	*12,70*	*11,26*	*20,15*	*14,76*	*15,80*	*74,70*
U Mann - Whitney	*1611,00*	*1880,00*	*7971,50*	*6225,50*	*4387,00*	*11493,50*
Sig. (2-tailed)	*0,00*	*0,00*	*0,00*	*0,00*	*0,00*	*0,00*

Table 6.1. The results of the questionnaire "EmIn" (D.V. Lyusin) for boys and girls aged 15-16 (average scores on the scales).

GENDER		EMOTIONAL AWARENESS	MANAGING OWN EMOTIONS	SELF-MOTIVATION	EMPATHY	IDENTIFICATION OF OTHERS' EMOTIONS
Girls	Average	*7,66*	*1,96*	*3,59*	*11,72*	*12,10*
Boys	Average	*7,07*	*11,88*	*11,12*	*1,89*	*2,37*
	U Mann - Whitney	*17019,00*	*4742,50*	*8276,50*	*6544,50*	*6966,00*
	Sig. (2-tailed)	*0,15*	*0,001***	*0,001***	*0,001***	*0,001***

Table 6.2. Average scores on N. Hall's emotional intelligence test scales for boys and girls aged 15-16.

The results show that all indicators except emotional awareness have significant differences between the sample of girls and the sample of boys. In boys, the leading components of emotional intelligence are the management of their emotions and self-motivation, which means a more developed ability to arbitrarily control their emotional states, their conscious regulation. Girls have the most pronounced components of emotional intelligence, such as empathy and recognition of other people's emotions. Thus, adolescent girls are able to empathize and sympathize with others, are emotionally responsive, and are able to successfully influence, support, or regulate the emotional states of others. Correlation

analysis of emotional intelligence and gender identity indicators showed that some factors of emotional intelligence have a significant correlation with femininity, others with masculinity (see table 6.3).

Gender identity	
MASCULINITY	FEMININITY
Components of emotional intelligence	
*Understanding own emotions (0,436**)*	*Understanding other emotions (0,672**)*
*Expression control (0,589**)*	*Control of other people's emotions (0, 612**)*
*Managing own emotions (0,680**)*	*Empathy (0,596**)*
*Self-motivation (0,621**)*	*Recognition of other emotions (0,606**)*

Table 6.3. The ratio of emotional intelligence components and gender identity of adolescence girls and boys.

For the analysis of gender differences in emotional intelligence of older adolescents, factor analysis of the data obtained by D.V. Lyusin's "EmIn" test and the N. Hall's Evaluation of emotional intelligence test was used. Factor analysis was carried out by principal components method using Varimax rotation. Table 6.4 presents the results of the gender differences analysis in emotional intelligence in adolescent girls and boys.

Leading components of emotional intelligence	
GIRLS	BOYS
Understanding other people's emotions	*Understanding own emotions*
Recognizing the emotions of others	*Expression control*
Interpersonal management (managing others emotions)	*Intrapersonal management (managing one's own emotions)*
Empathy	*Self-motivation (arbitrary control of your emotions)*
"Interpersonal emotional intelligence" factor	*"Intrapersonal emotional intelligence" factor*

Table 6.4. The structure of emotional intelligence of boys and girls of older adolescence.

The data obtained confirmed the correlation between the level of emotional intelligence and the level of academic success of older adolescents (ϱ=0,432, p=0,01). The high level of emotional intelligence development is correlated with the better academic success of older adolescents.

Thus, the hypothesis of gender differences in the structure of emotional intelligence in girls and boys of older adolescence was confirmed. The leading components of the emotional intelligence of adolescent girls are understanding other people's emotions, recognizing the emotions of others, interpersonal management (management of the other's emotions), empathy. For older adolescent boys the leading components of emotional intelligence are understanding of their own emotions, intrapersonal management (management of their emotions), expression control, self-motivation. The structure of boys' emotional intelligence is intrapersonal, i.e. the abilities of emotional intelligence are directed mainly at themselves; girls are characterized by interpersonal emotional intelligence, i.e. abilities are directed mainly to another person and interpersonal interaction. The causes of gender differences in the components of emotional intelligence, the expression of certain emotions, as well as their regulation, are largely due to education, as well as mediated by culture, social norms and stereotypes. The overall level of development of emotional intelligence of older adolescents is also associated with the academic success of adolescents. At the same time, academic success does not depend on the severity of its individual components, but on the integral indicator of general and emotional intelligence.

A brief review of master's degree papers given in this article, shows that works are primarily characterized by the complexity of research tasks addressing students with sufficiently high qualification for research. Research problems are relevant in the context of modern education, some can be continued as cross-cultural studies (for example, the study of emotional intelligence) or as practice-oriented development. The complexity of the research tasks, the leadership of the research conducted by the professors of the Sapienza University of Rome and their Russian colleagues, allow students to achieve a high level of scientific qualification.

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7. The contribution of social psychology to educational research: The mutual influence between students and their classmates

Stefano Livi, Alessandra Cecalupo

When we think about the contribution of psychology to educational research we often think about how individual attributes and qualities (clinical, cognitive or connected to personality) may contribute to the well-being and performance of students. These aspects, although fundamental, do not take into account the psychological effects of the complex social environment that is involved in the students' learning process. From this point of view, in recent years, social psychology has provided theoretical models, research methods and measures that allow to understand the educational psychological context from a multilevel perspective, that includes both the individual and the social environment in which the individual is absorbed, such as school classes, but also the family and friendship networks.

These assumptions become particularly relevant and are worth further consideration, especially when thinking about certain stages of development. For instance, adolescence is a critical stage of the life cycle because of all the different, complex developmental tasks that need to be faced throughout it, which also include reshaping one's role within the family and building healthy relationships with peers that, in turn, have a huge impact on the construction of identity. Feelings of affiliation and belonging to both formal and informal groups of peers become particularly strong and significant (cf. Camaioni, Di Blasio, 2002), so much that groups of peers assume an almost pervasive salience and relevance to the individual. This relevance implies that interactions with peers constitute a source of complex influences on perceptions, cognitions and behaviors of

young individuals (Hartup, 2005), in a continuous and dynamic relationship between social identity and personal identity (Albarello et al., 2018). In the educational context, these identity's developing processes are particularly relevant in school classes, which represent a social microcosm where students learn citizenship cooperation and develop their own academic self-concept.

The chapter will focus on social aspects involved in classroom and the deep bond that connects individuals and their classmates. In fact, classroom social aspects, such as cohesion or class climate as well as individual characteristics (from socialization or marginalization within their classroom to the students' personality characteristics) represent protective or risk factors for main students' outcome.

7.1. Class as social foundation for the students

Groups represent a fundamental reference for individuals throughout their existence. If this is true for adults, in young students the relationships that they have outside the family end up representing, as age grows, an existential compass to find the coordinates of their personal and social identity (Livi & Rullo, 2016). In this delicate evolutionary phase, the groups of peers and relationships established within their school class that, for the time spent and for the highly involving social comparison experienced with their classmates, often represent a crucial standard in the relational and cognitive development of school students. These experiences can therefore be configured as an experience of social citizenship in which the others represent, in the positive pole, a resource of skills and protection but also, in its dark side, the source of a competitive and stressful social confrontation in the delicate period of development of the Self (Livi, 2018).

From a social-psychological point of view, according to Rovai (2002) the class-group can be conceived as a social community of students who share knowledge, values and objectives; a community that influences the individuality of those who are part of it while, within it, a shared reality is built, in the formation of those relationships that give life to the group itself. In this sense, some psychological functions for the individual are well understood by some psychological processes at group level. Hence, class climate,

cohesion or simple social and task interdependence, may be the essence of class that leads students – and teachers – to feel personal worth, dignity and importance, while simultaneously foster resilience. Freiberg (1999), underlines the importance of different factors for classroom climate: the physical environment such as its size or its location within the school but also the arrangement of the classroom, coziness and functionality; the social system, that includes the relationships and interactions among students and the relationships and interactions between students and their teachers; teacher expectations about student outcomes (positive expectations, feelings of self-efficacy, professional attitude).

Another important construct related to classroom group climate is the goal structure. In fact, during the considerable amount of time students spend in classrooms, students construct meaningful systems or personal and social scheme about the purpose and meaning of schooling and academics, from their direct experiences and perceptions of what is emphasized in the classroom. These perceptions are termed by Ames (1992) classroom goal structures and encompass students' subjective perceptions of the meaning of academic tasks, competence, success, and purposes for students' engaging in schoolwork and are particularly important in order to examine the roles of classroom contexts in student motivation. Following self determination theory at group level, two forms of goal structures are presented (Andreman & Patrick, 2012): classroom mastery and performance goal structures. The classroom mastery goal structure involves a perception that learning and understanding are valued and that success is indicated by personal improvement. A classroom performance goal structure involves a perception that achievement and success entail outperforming others or surpassing normative standards (Ames, 1992). These goal orientations are orthogonal and so are the classroom's goals structures. That is, classrooms may be high in both mastery and performance goal structure, high in just one parameter, low in both, or any other configuration.

7.2. The students and their social context: the bright and the dark side of the classroom

Educational environments – and school classes in particular – lend themselves well to understand how the self may interact with the local, social contexts one's embedded in, and how these two conceptual levels (i.e. individual and group-level) are intertwined and continuously influence each other. Two of the phenomena that particularly show this continuous dialogue between individuals and their groups in educational settings are bullying and social comparison processes.

Olweus, one of the most eminent researchers about bullying in schools, has defined bullying as the repetitive and aggressive behavior intended to cause harm and hurt others. It usually implies that a person (the *bully*) intentionally and systematically harms another person (the *victim*), either through direct or indirect forms of aggression, in a relationship with an important imbalance of power (Olweus, 1991). A lot of studies have primarily focused on the psychological characteristics of bullies and victims (Olweus, 1993; 1973; 1978), showing how bullies often show aggressiveness, impulsivity, dominance and low empathy towards their victims. They usually do not show traits related to anxiety and insecurity. Victims, on the other hand, tend to be psychologically fragile, sensitive and insecure and usually find it hard to establish themselves within their group of peers. They therefore tend to suffer from internalizing problems and might not be easily accepted by peers (Menesini et al., 2017). Because of these differences, and because of the imbalance of strength and social status that comes from them, the relationship between the bully and the victim is conceptualized as strongly asymmetrical.

Aside from these aspects more related to intra-psychological features, since bullying is a phenomenon deeply rooted in dynamics that go beyond the individual-level, the focus of several researches has widened in order to better understand the characteristics of social contexts in which the episodes are more prone to take place. Paying attention to social contexts, has brought to light the relevance that other "actors" have in these dynamics (Salmivalli et al., 1996). Aside from the bully and the victim, in fact, other people in their social

context can take on other, different roles in the "bullying scenario". For example, there can be *supporters* (i.e. the ones that support the bully), *defenders* (i.e. the ones that support and help the victim) and *bystanders* (i.e. the ones who see and know what is happening but don't do anything about it). This means that, especially in contexts like schools and classrooms, certain social dynamics can bring other people to be involved in this kind of episodes and play a relatively active role (or no role at all), either in their perpetration or in their prevention. Researches have therefore tried to understand the role of group dynamics in bullying episodes and which of these dynamics can be considered a risk or a protective factor, in the continuous interaction between individualities and group-level aspects. While certain group norms and phenomena like social contagion, diffusion of responsibility and moral disengagement have been linked to the rising of prevarication episodes in groups such as the school class (Garandeau et al., 2014; Olweus 1973, 2001; Salmivalli & Voeten, 2004), other studies have shown that groups can also become a powerful protective factor. Researches carried out in Italy clearly show this evidence. In particular, cohesion has been found to be fundamental in preventing victimization episodes in schools and school classes (Livi et al., 2019). It has emerged that in the classes where perceived cohesion among students is high, levels of victimizations are significantly lower than those in classrooms where perceived cohesion is low, and this happens even when bullies are equally present in both types of classes. Building a strong, pervasive sense of cohesion among schoolmates seems to be one of the most impactful ways of protecting potential victims and stemming episodes of prevarication. This evidence stresses how important it is to consider contexts and the plurality of individuals that operate within them. Bullying episodes greatly vary depending on interactions among the individuals and the dynamics of the groups they belong to, and the two main characters involved in this kind of episodes (e.g. the victim and the bully) are never, truly alone in how they build and develop their relationship.

Influences from the local, social context come into play also when students try to evaluate themselves, their academic capabilities and their future possibilities. Studies based on the *Big-Fish-Little-Pond Effect* (Marsh & Parker, 1984) particularly show how peers become a

fundamental frame of reference when kids and adolescents try to evaluate their performances in order to create their own self-construal regarding academic self-concept. The *BFLPE*, which is an application of the Social Comparison Theory (Festinger, 1954) in academic environments, posits that students engage in social comparisons with their schoolmates whenever they are trying to form their academic self-concept, or are generally trying to evaluate their academic abilities (Rullo, Livi, Pantaleo, & Viola, 2017). This concept implies that students do not judge themselves only based on their objective grades, but they actively search for a frame of reference in order to form an accurate idea of themselves, finding this frame in their peers' average academic achievement. Hence, self-concept can be considered as a multidimensional construct affected by its relationships with different and various influences. Therefore, Marsh (1987) theorized that equally able students end up having different views of their achievements depending on how high their peers' average level is. This means that students who attend a higher achieving environment might tend to have a lower concept of their academic achievement and their school abilities; meanwhile, students who attend a lower achieving context might end up having a higher academic self-concept when comparing themselves to other students.

In Italy, studies regarding the *BFLPE* have especially focused on how group dynamics (e.g. cohesion), established within the school class, shape adolescents' social comparison processes (Livi et al., 2019). In particular, this corpus of studies arose from the need of deepening the knowledge about how levels of closeness within in-groups – precisely, class-groups – have a predominant role in students' perceptions of their future possibilities. Findings up to date are particularly interesting, since they have led to the maybe not-so-reassuring evidence that the more students perceive their own class as particularly cohesive (and, therefore, feel particularly close to other members), the more they will suffer from unflattering social comparison, especially when reflecting on future possibilities. This means that, just as Festinger himself had already posited in 1954, when an individual feel strongly attracted to a group, that very group becomes a fundamental frame of reference for that individual in comparison processes. It also means that positive group dynamics, as cohesion, might not always naturally lead to positive outcomes for

each and every person, showing how important it is to always keep in mind the constant interplay between individuals (and individualities) and the social groups they belong to.

7.3. Conclusion

One of the most interesting aspects that have arisen in several fields of social psychological studies is that individuals can never be considered alone in the construction of their own self and their own world. As Bronfenbrenner pointed out in his ecological systems theory (1979), a person's life can be conceived as the continuative interaction between aspects intrinsically related to the self (i.e. *individual level*), aspects related to local contexts (such as one's family, friends circle or the school attended), as well as factors operating at a more general level (i.e. social and cultural norms). That is why individuals' perceptions, attitudes and behaviors, aside from being affected by their personal, intra-psychological identity, are influenced by the knowledge that comes from their belonging to social groups – and, on a note more related to affects, by the value and emotional significance they give to that belonging.

Studies on bullying, such as those on social comparison presented in the previous paragraphs, make it clear that when school groups become cohesive their role in the lives of students is of fundamental importance, both in helping to develop a sense of integration and belonging to protect the individual, and in influencing the tendency to self-assess and judge oneself through powerful normative standards of social comparison, losing sight of one's individuality. This means that, especially during adolescence, peer groups assume an almost pervasive salience and relevance for individuals. This same relevance implies that peer interactions, and in particular in the classes, constitute a source of complex influences on perceptions, cognitions and behaviours, in a continuous and dynamic relationship between personal identity and social identity. For this reason, the class-group is configured as a social context that needs to be carefully monitored, monitoring that requires the implementation of specific knowledge and skills, which allow to better understand all aspects involved in the growth and to work on them in order to create the conditions for the optimal development of each individual.

The aspects discussed above, have several implications on a more practical note as well. Being aware of how influences from both the internal and the external world affect the inner self, and how particular aspects of relationships with others on one hand, and self-definitions on the other connect with specific outcomes related to one's life, has a key role in better understanding students' day to day life. This can in turn can give people in charge of educating kids and adolescents the opportunity to improve their practices and build contexts that could give youngsters the opportunity to fulfill their potential, contexts from which they could actually benefit. Youngsters' optimal development is something that should be prioritized, as every aspect implied and related needs to be carefully weighted and deeply comprehended, and the ongoing research concerning the plurality of interplays and dialogues between intra-psychological features and inter-psychological occurrences perfectly lends itself to this purpose.

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8. Relationships and values in high school students' groups in conditions of the modern Russian school

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The actual problem of studying the relationships and values in students' groups is connected with a new stage of educational reforms in our country, which are focused on forming and realizing an appropriate concept of general education taking into account objective processes and tendencies in economy, politics and culture. A school working on the present and future must be oriented on personality development of students providing a high standard education, aspiration to high psychological comfort for every aspect of the educational process (Saeid et al., 2016), creation of free atmosphere, providing social and pre-professional adaptation of students, aspiration to a high level of self-organization of student groups.

Psychologically effective organization of a student's upbringing in a group or by means of a group (the authors consider a class as a primary student group) needs to take into account the specific character of interpersonal relations and values, on the basis of which they are built and developed. Students' interpersonal relations, including the system of aims, expectations and orientation of the group members about each other, represent subjectively experienced relations between them, which are objectively manifested in character and ways of interpersonal communication (Zhuravleva, 2017).

For high school students (the stage of early youth), interpersonal communication is one of the most significant spheres of an active person. When a person is of this age, he/she usually changes the

general direction and general matter of interpersonal relations. They become more selective (individualized, personalized), intimate. These relations perform the function of the major social polygon for self-expression and self-assertion of boys and girls. High school students broaden their field of communication through a considerable increase in social space, constant readiness (expectation) for communication and increase in time of conversation. With the help of communication, high school students realize their needs in new impressions, acquiring new experience, self-representation in a new role, understanding by the people of the same age, psychological intimacy, being members of a group (Rusalov et al., 2015). Satisfying these needs is connected with the deep personal experiences of students. When high school students communicate with each other, they actively experiment with adopted models of men's and women's behavior (gender models). Certainly, the youths' communicativeness is self-centered, because the need in self-expression, individualization, representation of their experiences often dominates the interest in feelings and emotions of other students and creates mutual tension and dissatisfaction in relations.

The examined peculiarities of interpersonal communication of high school students allow defining it as a leading activity (Elkonin, 1989), in which the main contradictions of the social development situation are solved, all the potentialities of the development of the cognitive and emotional-personal spheres are realized, and a central new age formation is established, that is professional self-determination. The construction of the teaching and educational process of high school students, aimed at creating the conditions for the full development of the personality through self-actualization, should be built taking into account the psychological patterns and parameters of the manifestation of interpersonal interaction of young men and women (motivation, values, behavioral patterns etc.). With regard to high school students, it is reasonable to talk about the quality and level of relationships in classes as one of the key components of the quality system of education.

This research was aimed at studying the peculiarities of the relationship of high school students in classes and the values on which they are built, from the position of influence of two factors:

1. Education in rural and urban schools;

2. Gender differences.

This formulation of the research problem is conditioned by the fact that different values and priorities crystallize and a special positive vital meaning is attached to different objects and purposes in different sociocultural conditions, on the one hand, and in the conditions of mastering and implementing various gender patterns of behavior and experiences, on the other hand.

D.B. Elkonin (1974) noted the cultural, intellectual and personal identity of a rural child's development; he pointed out the incorrectness of the transfer of the studies' results obtained on groups of urban students to rural schoolchildren. T.E. Zalessky's comparative studies showed that rural schoolchildren, in comparison with urban ones, are more pragmatic about science: they regard it as an area of professional activity. M.A. Menshikova identified the lower level of professional claims and the narrow professional orientation of students in rural schools. N.I. Krylov found that rural schoolchildren, realizing their potential, are less likely to continue their studies at higher educational institutions. They are less oriented in modern professions and often show a contradiction between professional intentions and academic achievement in the relevant subjects, and in general there is a relatively weak stability of professional choices (Golomb, 2004).

Research made by N.I. Eliseeva, E.V. Sidorina, S.V. Pepelyaeva (2014) showed that:

- for a rural child, a school is both study, leisure, a source of cultural development, and a factor in the formation of ideas about the way of life and the place in society;
- rural schoolchildren are more likely to show concern for their loved ones, although trust in the family is valued by all children;
- among rural schoolchildren, survival issues dominate in the forecasts for the future: high concern about the future, problems of providing family needs, employment (among urban school students, consuming issues dominate).

In a sociological research made by K.L. Shirokova and M.M. Zinyakova (2006) the deterioration of the situation of rural residents in basic life-supporting conditions is noted, including the destruction

of the social infrastructure due to the lack of adequate funding for preschool and school education, health care, culture, and consumer services. Therefore, it is quite natural that there is a lack of motivation for living in rural areas together with the refusal of young professionals to seek employment in the countryside after training and also the dominance of values related to life support.

When considering the influence of gender on the values and relationships of high school students, the authors rely on the results of pedagogical, psychological and sociological research aimed at studying the specific features of mastering the educational material, individual psychological characteristics, the characteristics of the response in situations of uncertainty, social roles, behavioral patterns and professional preferences. All of them confirm the presence of corresponding differences between males and females, with a reference to the fact that in the formation of gender differences a leading role belongs to the process of socialization, that is, gender differences can be adequately explained only if social circumstances that mediate their emergence and manifestation are taken into account (Malkina-Pyh, 2006; Slobodskaya, 2017).

School is the most important institution for the child's socialization, being responsible for the task of reproduction of social relations, the formation of social attitudes, patterns of behavior, including the gender ones. School experience helps to master the laws of life of the adult world and adequate ways of living within the boundaries of these laws. The transfer of social knowledge and the formation of social skills are carried out in real interaction in class. By studying the characteristics of relationships in classes and the values that determine them, one can talk about the degree of correspondence of the content of school life and organizational forms not only to the norms of social relations, but also to the notions of psychological security and the comfort of the educational environment.

8.1. Objectives of the study

1. To identify the peculiarities of relationships and values in classes based on the sample of high school students of Stavropol Territory (Russia).

2. To conduct a comparative analysis of the indicators of the level and quality of relationships and values in classes of high school students studying in rural and urban schools.
3. To identify the impact of gender characteristics of high school students on self-assessment, relationships and values in classes.

8.2. Methods of the study

Description of the sample of the study: to calculate the sample size, the authors used the method of generalizing indicators (it allowed characterizing the age and gender structure of pupils of the senior classes of Stavropol Territory with the help of absolute and relative values) and methods of interpolation and extrapolation.

The sample size in accordance with the requirements of representativeness is of 542 respondents, which make up 1.1% of the total population of the high school students of Stavropol Territory (49,273 schoolchildren). The average sampling error is 4.19%. The calculation of the average sampling error for the self-incidental, non-repeatable method of selecting respondents was done according to the usually adopted formula [1].

The respondents were chosen by the method of a random, non-repeatable route selection "with a step offset". The value of the "sampling step" was 5 units. The formation of the sample was based on the principle of a three-stage zoned (stratified) proportional sample of high school students in municipal educational institutions of Stavropol Territory and the quota procedure for gender and age. In accordance with this, senior students of 15 schools from three regions of Stavropol Territory (Arzgirsky, Levokumsky, Budennovskiy regions) and Stavropol city took part in the study, including:

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[1] $\mu = \sqrt{\frac{\sigma^2}{n} 1 - \frac{n}{\mathrm{N}}}$

where: n – the volume of the sample; N – the volume of the general population; μ – the average sampling error; σ– the dispersion that measures the variance of the trait in the general population (assuming that the proportion is about 50% or 0.5).

- 274 schoolchildren studying in rural schools, 268 schoolchildren attending urban schools;
- 291 young girls; 251 young boys.

8.3. Diagnostic procedure

The peculiarities of relationships and values in classes were studied using the Degen's (2006) Socially Responsible Leadership Scale (SRLS), adapted and validated to the Italian context (du Mérac, 2013; 2014) to which a dimension of leadership capabilities was added (Lucisano and du Mérac, 2015, du Mérac, 2015). The structure of the questionnaire includes 9 scales (the scales are given in the author's interpretation), measuring the leadership ability (organizational abilities), openness to novelty, self-consciousness, consistency (correspondence of actions to beliefs and values), obligation, representation of tendencies to compare oneself with others, a common goal (sense of community within the class), cooperation, citizenship (orientation to inclusion in the class). The questionnaire consists of 54 statements that require a response (evaluation) from the range: "completely disagree", "rather disagree", "difficult to answer", "rather agree", "completely agree" based on the subjective self-report of each party.

The interview procedure (interviewing and filling in the questionnaire form) complied with the requirements of the instruction and norms of the Federal Act "On Personal Data" No. 152-FZ of July 27, 2006.

Statistical processing of data was carried out using SPSS_Statistics_22_win32 software (frequency analysis, analysis of multiple answers, H-Kruskal-Wallis criterion for the differences, F-Livin's criterion for the equality of variances, t-criterion for the equality of means).

8.4. Discussion of results

Analysis of high school students research results for the level and quality of relationships and values in class (questionnaire, Part 1) revealed a prevalence of high values on all the scales of the questionnaire (Table 8.1): the leadership ability (organizational

abilities), openness to novelty, self-consciousness, consistency (correspondence of actions to beliefs and values), obligation, representation of tendencies to compare oneself with others, a common goal (sense of community within the class), cooperation, citizenship (orientation to integration in class).

However, for a number of scales (leadership ability, openness to novelty, cooperation, citizenship (orientation toward integration in class), high frequencies of low values and values from the uncertainty zone are observed (Table 8.1), which indicate the representation of different positions of high school students on the problems discussed. This also shows the presence of certain factors of influence on the formation of relationships in class and values, which are their determinants.

QUESTIONNAIRE SCALE	LOW VALUES (%)	UNCERTAINTY ZONE (%)	HIGH VALUES (%)
The leadership ability	*16.7*	*22.3*	*61*
Openness to novelty	*16*	*19.4*	*64.6*
Self-consciousness	*10*	*14.9*	*75.1*
Consistency	*6.2*	*11.3*	*82.5*
Obligation	*5.9*	*8.2*	*85.5*
Tendency to comparison	*10.8*	*13*	*76.2*
Common goal (sense of community within the class)	*10*	*17.5*	*72.5*
Cooperation	*12.1*	*20.4*	*67.5*
Citizenship (orientation to integration in class)	*13.7*	*19.9*	*66.3*

Table 8.1. Frequency analysis of questionnaires values of high school students.

The authors studied the impact of teaching in rural and urban schools and gender characteristics on the indicators of the level and quality of relationships and values in classes of high school students.

An analysis of gender differences in high school students in assessing the relationships and values in class using the Livin's statistical criterion for equality of variance (Table 8.2) showed that for most of the parameters of the questionnaire (citizenship (group orientation) ($p \leq 0.01$), a common goal (sense of community within the group) ($p \leq 0.05$), the tendency to the comparison ($p \leq 0.01$), obligation

(p≤0.01), consistency (p≤0.01), openness to novelty (p≤0.01), leadership ability (p≤0,01)) girls and boys occupy close positions.

The exception are the indicators of cooperation, reflecting the orientation of high school students to positive interaction, when either their goals and interests coincide, or the achievement of ones' goals is possible only taking into account the aspirations and interests of others. Self-consciousness indicators reflecting the level of formation in the high school students of self-image and self-regulation are also the exceptions.

QUESTIONNAIRE SCALES/ STATISTICAL PARAMETERS	LIVIN'S CRITERION FOR THE EQUALITY OF VARIANCES		T-CRITERION FOR THE EQUALITY OF MEANS						
	F	Sign.	t	De-gree of free-dom	Sign. (double -sided)	Diffe-rence of means	The average quadratic error of difference	95% confidential interval for the difference	
								Low	High
Citizenship (orientation to a group)	*6.80*	*.009*	*-1.76*	*530*	*.08*	*-.114*	*.065*	*-.241*	*.013*
Cooperation	*2.38*	*.124*	*.24*	*530*	*.81*	*.014*	*.059*	*-.104*	*.132*
Common goal (sense of community within the class)	*4.55*	*.033*	*-.44*	*530*	*.66*	*-.028*	*.064*	*-.153*	*.097*
Tendency to comparison	*17.63*	*.000*	*-1.02*	*530*	*.31*	*-.060*	*.059*	*-.176*	*.056*
Obligation	*14.18*	*.000*	*-2.32*	*530*	*.02*	*-.127*	*.055*	*-.234*	*-.019*
Consistency	*5.78*	*.017*	*-1.48*	*530*	*.14*	*-.086*	*.058*	*-.201*	*.028*
Self-consciousness	*.52*	*.470*	*1.84*	*530*	*.07*	*.115*	*.062*	*-.008*	*.237*
Openness to novelty	*16.56*	*.000*	*-.23*	*530*	*.82*	*-.0115*	*.050*	*-.111*	*.088*
The leadership ability	*6.48*	*.011*	*.30*	*530*	*.76*	*.020*	*.065*	*-.109*	*.148*

Table 8.2. Comparative analysis of gender differences (F-Livin's criterion for the equality of variances) in the values of the indicators of high school students (P. Lucisano), aimed at studying relationships and values in classes.

According to the parameter of self-consciousness (p≤0.01), statistically significant differences between girls and boys were diagnosed (H-Kruskal-Wallis criterion). Since H-Kruskal-Wallis criterion allows establishing the differences between 2 or more groups, and the direction of these differences are not fixed, the authors compared the mean values (MX) on the scale "Self-consciousness" in young boys (Mx=4.05) and girls (Mx=3.93) and found that young men are more able to determine their priorities, they trust themselves more, they tend to think that they know themselves and can describe their own personality, their "similarity – dissimilarity" to others, they express themselves more easily (or more actively).

A comparative analysis of multiple answers on the scale of "Self-Consciousness" (Table 8.3) showed that young girls often choose answers from the uncertainty zone: "difficult to answer", "rather disagree", "rather agree", while young boys tend to give "pole" answers: "completely agree", "completely disagree", that indicates a clearer formation of ideas about themselves and the positions corresponding to these views.

VARIANTS OF ANSWERS	SEX	
	MALE	FEMALE
Completely disagree	*51.50%*	*48.50%*
Rather disagree	*39.80%*	*60.20%*
Difficult to answer	*39.20%*	*60.80%*
Rather agree	*42.40%*	*57.60%*
Completely agree	*51.00%*	*49.00%*

Table 8.3. Comparative analysis of multiple responses on the scale "Self-consciousness" of young boys and girls.

On the "Cooperation" scale, statistically significant differences between boys and girls were not diagnosed, so a mismatch of positions can be accidental.

An analysis of assessments of relationships and values in classes of high school students studying in urban schools and those from rural schools showed significant differences (H-Kruskal-Wallis criterion) in a number of parameters: citizenship (group orientation) (p≤0.01), a tendency to the comparison (p≤ 0.05), consistency (p≤ 0.05), openness to novelty (p≤ 0.05). A comparative analysis of the

average values of these parameters in rural and urban schoolchildren (Table 4) revealed a number of trends:

1. high school students from rural schools are more focused on integration in the group than those from urban schools.
2. high school students studying in urban schools have a more pronounced focus on comparing themselves with their classmates and searching for differences. They are more open to the perception of the others' opinions and are willing to share their own thoughts.
3. high school students from urban schools often assess their behavior as consistent with their beliefs, it is important for them to correlate their actions and personal values.
4. high school students from rural schools are more open to novelty.

QUESTIONNAIRE SCALES, PART 1	SCHOOL LOCATION	MEAN VALUE	STANDARD DEVIATION	THE AVERAGE QUADRATIC ERROR OF THE MEAN
Citizenship (orientation to a group)	*In the urban area*	*3.6654*	*.81782*	*.04536*
	In the rural area	*3.8701*	*.61952*	*.04316*
Cooperation	*In the urban area*	*3.7531*	*.76187*	*.04226*
	In the rural area	*3.8362*	*.57560*	*.04010*
Common goal (sense of community within a class)	*In the urban area*	*3.8616*	*.78910*	*.04377*
	In the rural area	*3.9239*	*.66558*	*.04637*
Tendency to comparison	*In the urban area*	*4.0258*	*.75310*	*.04177*
	In the rural area	*3.9498*	*.57519*	*.04008*
Obligation	*In the urban area*	*4.2905*	*.68564*	*.03803*
	In the rural area	*4.3476*	*.56771*	*.03955*
Consistency	*In the urban area*	*4.2270*	*.69665*	*.03864*
	In the rural area	*4.1272*	*.65653*	*.04574*
Self-consciousness	*In the urban area*	*3.9796*	*.77335*	*.04290*
	In the rural area	*3.9963*	*.65085*	*.04535*
Openness to novelty	*In the urban area*	*3.7121*	*.62751*	*.03481*
	In the rural area	*3.7445*	*.53534*	*.03730*
The leadership ability	*In the urban area*	*3.6527*	*.81599*	*.04526*
	In the rural area	*3.6360*	*.67257*	*.04686*

Table 8.4. Analysis of the average values of the questionnaires of high school students studying in urban and rural schools.

Due to the fact that on the scales of "tendency to comparison", "consistency", "openness to novelty", the significant level of differences between high school students enrolled in rural and urban schools is p≤0.05, i.e., an estimate of the probability of the first kind error falls into the uncertainty zone, in the interval [0,01; 0,1], the authors performed a comparative analysis of multiple responses of these scales. As a result, the authors found the following features: greater homogeneity of responses in a group of rural schoolchildren; high frequency of pole responses "completely disagree" or "completely agree" to questions within the same scale in urban schoolchildren; "difficult to answer" is a frequently chosen answer by the group of urban schoolchildren (Table 8.5).

Questionnaire scales	Tendency to comparison (%)		Consistency (%)		Openness to novelty (%)	
Variants of answers	US	RS	US	RS	US	RS
Completely disagree	*70.8*	*29.2*	*61.8*	*38.2*	*67.5*	*32.5*
Rather disagree	*56*	*44*	*51.4*	*48.6*	*57.3*	*42.7*
Difficult to answer	*61.6*	*38.4*	*60.1*	*39.9*	*67.2*	*38.2*
Rather agree	*55.5*	*44.5*	*58.5*	*41.5*	*56.1*	*43.9*
Completely agree	*66.7*	*33.3*	*64.5*	*35.5*	*63.2*	*36.8*

Table 8.5. Comparative analysis of multiple answers of high school students from urban and rural schools on the basis of "tendency to comparison", "consistency", "openness to novelty". Notes: US – urban schoolchildren, RS – rural school children

Thus, as indicated by the analysis of differences (H-criterion of Kruskal-Wallis), the trends for high school students in rural schools are more stable than for high school students from urban schools.

According to the parameters of cooperation (p≤0.01), a common goal (sense of community within a group) (p≤0.01), obligation (p≤0.01), self-consciousness (p≤0.01), leadership ability (p≤0.01), high school students studying in rural and urban schools have close positions (Table 8.6).

QUESTIONNAIRE SCALES/ STATISTICAL PARAMETERS	LIVIN'S CRITERION FOR THE EQUALITY OF VARIANCES		T-CRITERION FOR THE EQUALITY OF MEANS						
	F	Sign.	t	De-gree of free-dom	Sign. (double -sided)	Diffe-rence of means	The average quadratic error of difference	95% confidential interval for the difference	
								Low	High
Citizenship (orientation to a group)	*14.77*	*.080*	*-3.08*	*529*	*.002*	*-.205*	*.067*	*-.335*	*-.074*
Cooperation	*15.99*	*.000*	*-1.34*	*529*	*.181*	*-.083*	*.062*	*-.205*	*.039*
Common goal (sense of community within a class)	*7.28*	*.007*	*-.942*	*529*	*.347*	*-.062*	*.066*	*-.192*	*.068*
Tendency to comparison	*11.44*	*.061*	*1.24*	*529*	*.216*	*.076*	*.061*	*-.045*	*.199*
Obligation	*8.359*	*.004*	*-.998*	*529*	*.319*	*-.057*	*.057*	*-.169*	*.055*
Consistency	*.003*	*.955*	*1.64*	*529*	*.101*	*.099*	*.061*	*-.019*	*.219*
Self-consciousness	*6.052*	*.014*	*-.257*	*529*	*.797*	*-.017*	*.065*	*-.144*	*.111*
Openness to novelty	*3.209*	*.074*	*-.613*	*529*	*.540*	*-.032*	*.053*	*-.136*	*.071*
Leadership ability	*7.851*	*.005*	*.245*	*529*	*.806*	*.0167*	*.068*	*-.117*	*.150*

Table 8.6. Comparative analysis of equality (F-Livin's criterion for the equality of variances) values of the indicators of the questionnaire of high school students (P. Lucisano), who study in urban and rural schools.

That is, the formation of a sense of community within the group, obligation as a personal quality, organizational abilities and the mental image of "I" do not depend on the school that a senior student attends. These parameters basically have psychological mechanisms of development and their factors or predictors are both the inclusion in the activity as a subject and the characteristics of an individual-personal response.

8.5. Conclusion

This study showed the relevance of specifying values and modern high school students' relations in classes, which have been built on

their basis, because that promotes understanding the ways of an individual student's development on the one hand, and the directions of organizational development of the school system educational environment on the other hand, which are aimed at implementing some educational needs, activation of self-development mechanisms, formation of an integrated and adequate outlook of schoolchildren.

Trends in the relationships of high school students identified in the study point to the special importance of interpersonal communication in classes in the realization of the need-motivational states, such as: desire for self-leadership, desire to have an influence on classmates, openness to new experience, structuring and refinement of their own ideas, striving for consistency between own actions and beliefs, desire for the self-assessment as a reliable comrade, estimated trends of comparing yourself with the others, sense of community within a class, cooperation orientation.

Training in rural or urban schools has an impact on the severity of the orientation of high school students in a group, the estimated trends in finding similarities and differences with themselves and their classmates, the intrapersonal determination of behavior, and openness to novelty. It is noteworthy, that high school students from rural schools are more oriented towards integration within the group and are open to novelty, and urban schoolchildren have a more pronounced focus on comparing themselves with their classmates, being more open to accepting the others'opinions and ready to express their own opinions. They more often consider their behavior as appropriate to their inner convictions and personal values. Moreover, the indicated tendencies are more stable among rural high school students and are probably related to the fact that the specific socio-cultural situation of development (early involvement in adult activities, lack of broad social alternatives, and traditional way of life) leads rural high school students to survive in the group and deprives them of the growing need for additional sources of development. The pragmatic approach to knowledge and activity is conditioned by the pronounced dependence on living conditions in the countryside.

Gender differences manifest themselves in a more clearly defined self-image, a more pronounced ability to determine their priorities, more active self-expression among young boys. For most of the

studied parameters of the relationships in class, young boys and girls have close positions.

The analysis of the peculiarities of the relations between Russian high school students, which are formed in the student collectives (classes) and the values that determine them, set a whole new set of research tasks, including the organization of a similar study on groups of high school students studying at Italian schools (P. Lucisano's questionnaire was tested on the Italian sample) with the subsequent comparative analysis of the influence of the educational environment of schools in Russia and Italy on the system of student relations in classes.

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9. Learning to learn from experience. Traineeship as a training model to enhance learning

Anna Salerni

The best way to learn is from experience but experience itself is not enough. We learn only when we can attribute meaning to our experience, linking theory and practice through reflection. Learning from experience means knowing how to reflect and think, either alone or together with the company of other people. After all, learning is never a merely individual phenomenon that concerns only a person, but it involves the community of practice (Lave, Wenger, 1991). This type of learning can be defined as the process whereby knowledge is created through the transformation of experience.

According to experiential learning theory, we learn through a "learning cycle". "Learning is the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38). Our experience serves as a basis for reflection. From reflections, we have been developing ideas about the world. This form of thinking leads us to connect previous and next experiences in a continuous chain and to identify further and even long-term consequences and outcomes of our actions and thoughts. The learning cycle does not necessarily begin with experience. As John Dewey argued:

> "Thinking […] is the intentional endeavour to discover specific connections between something which we do and the consequences which result, so that the two become continuous. Their isolation, and consequently their purely arbitrary going together, is cancelled; a

unified, developing situation takes place" [1].

While more traditional approaches give primary emphasis to acquisition of knowledge, brick after brick as if a wall was being buildt, the experiential learning view conceives knowledge as a flexible network of ideas and feelings (Kolb, 1984). Based on this assumption, learning is not mere accumulation of knowledge, it rather entails changing assumptions and conceptions, transforming oneself in the process (Mezirow, 1991). A fundamental proposition to the experiential learning theory is that learning is a holistic process that fully involves human beings: thinking, feeling, perceiving and behaving are all integrated functions (Kolb, 1984).

In short, knowledge results from the combination of grasping experience and transforming it.

According to Kolb's model, to be effective, learners need four kinds of abilities:

- concrete experience: a new experience or situation is encountered, or a reinterpretation of existing experience;
- reflective observation of the new experience: reflect on and observe their experiences from many perspectives;
- abstract conceptualization*:* reflection gives rise to a new idea, or a modification of an existing abstract concept. The person has learned from their experience;
- active experimentation: the learner applies their idea(s) to the surrounding world to see what happens (Kolb, 1984).

Thus, learners can be at times actors or observers, going from active involvement to analytic detachment: they need to act and reflect, in order to be concrete and theoretical at the same time. This model, that does not necessarily begin with experience, shows very clearly the relation between experiential learning and reflection. Kolb (1974) views learning as an integrated process in which each stage is

[1] Dewey, J. (1916). *Democracy and Education* (pp. 144-145). New York: Macmillan. Many authors seem to agree that it was the initial work of John Dewey (1933), that was developed by Donald Schön (1983, 1987, 1994), Argyris and Schön (1996) and Jack Mezirow (1990) that established the foundations of reflective practice.

mutually supportive of and feeding into the next. It is possible to enter the cycle at any stage and follow it through its logical sequence.

However, effective learning only occurs when a learner can execute all four stages of the model. Therefore, all the stages of the cycle are effective as a learning procedure on their own.

Reflection plays an important role in the experiential learning cycle by providing a "bridge" between experience and theoretical conceptualisation.

Donald Schön (1983), one of the most influential thinkers who helped develop the theories and case studies of reflective learning, has explored the implications of the use of reflective thinking within the context of professional practice, recognized many years later Kolb, reflection as an essential means to acquire professional knowledge. He introduced the concepts of *reflection-in-action*, spontaneous and immediate, namely the thought that we take whilst involved in a situation, and *reflection-on-action*, consisting in an analysis of the circumstances of the event, from a distance, and planning of future actions, based on careful consideration of all information (Schön, 1983). Brookfield (1995) named this "critical reflection", where the word critical was in the context of exploring the breadth and depth of practice, rather than to focus on the negative or "crisis point" interpretations of the term.

"Reflection-in-action" and "reflection-on-action" provide critical reflection on what informs practice and how they subsequently develop or hinder workplace practices.

Later on, Killion and Todnem added the proactive aspect of reflection-for-action, as the desired outcome of the first two types of reflection (Killion and Todnem, 1991).

David Kolb's theory was influenced by the work of John Dewey (1938), Kurt Lewin (1946), and Jean Piaget [2] (1971). If we critically analyse the three most influential theories on experiential learning, we can easily find similarities among them. The integration of the

[2] In Piaget's framework, the moving forces of cognitive development are the processes of accommodation of ideas to the external world and assimilation of experience into existing conceptual structures. Learning is, then, a conflicted process, filled with tension among the existing ideas and new knowledge, skills, or attitudes emerging from experience, trying to cut out a space for themselves in our cognitive structure.

aforementioned three modes [3] taken together form a unique perspective on learning (Kolb, 1984), conceived as a process rather than in terms of outcomes: "Ideas are not fixed and immutable elements of thought but are formed and re-formed through experience" (Kolb, 1984, 26). As a consequence, knowledge continuously emerges from experience, implying that "All learning is relearning" (Kolb, 1984, 26), since everyone faces new experiences drawing from ideas and knowledge which stemmed from previous ones.

As Dewey (1938) wrote, experience influences the formation of attitudes of desire and purpose, as every experience changes in some degree the objective conditions under which subsequent experiences take place. In this respect, he made a distinction between educative and mis-educative experiences, the latter having "the effect of arresting or distorting the growth of further experience" (Dewey, 1938, 25).

In this sense, reflection plays a crucial role by providing a bridge between practical experience and theory (Schön, 1983, Mason, 2014). It helps to activate a circular process between thought and action, essential to avoid acting in a mechanical way, based on habit or merely applying theories and procedures (Dewey, 1933). Dewey defined reflection as a process aimed at "Transforming a situation in which there is experienced obscurity, doubt, conflict, disturbance of some sort, into a situation that is clear, coherent, settled, harmonious" (Dewey, 1933, 101-102).

9.1. Aims of curricular traineeship

Traineeship provide opportunities to learn from experience and apply theoretical knowledge and skills in practice. The curricular traineeship is a period of work experience offered to students to acquire knowledge and professionality. In Italy, curricular traineeship, a part of a student's study plan in Universities, is

[3] Lewin's model of Action Research and Laboratory Training; Dewey's model of Developmental Learning; Piaget's model of Learning and Cognitive Development (Kolb, 1984)

generally performed by students enrolled in bachelor's degree or in master's degree courses.

In the Education and Training programmes of all levels at Sapienza University of Rome, traineeship is necessary to achieve learning goals and essential for the students' professional and personal growth. University traineeship is a form of experiential learning that integrates knowledge and theory learned in formal contexts (academic studies) with skills developed in a professional setting (Salerni, Sposetti, Szpunar, 2014). Traineeship is described by Donald Schön as "A setting designed for the task of learning practice. In a context that models a practice world, students learn by doing. The practicum is a virtual world, relatively free of the pressures, distractions, and risks of the real one. It stands in an intermediate space between the practice world, the 'lay' world of ordinary life, and the esoteric world of the academy" (1987, 37). A traineeship offers the students the chance to learn by doing, in a setting, an organization, where they are supervised by a work-place professional figure (a tutor) and have the opportunity to achieve their own learning goals, without the responsibilities of being a permanent employee.

There are many benefits to undertaking a traineeship whilst at university:

- the students gain knowledge and work experience. The academic studies can be enriched by the new perspectives, experience and awareness that the students gain during cooperation with a company.
- the students develop and learn key skills. A work placement provides the opportunity to develop key employability skills, such as problem-solving, teamwork, communication and time management that employers look for.
- the students try out a job. It offers a chance to test a job to determine if it is the right choice and to know different roles and functions.
- the students transition into a job. Many companies use traineeship as a way to enhance their recruitment efforts. Employers prefer graduates who have experience and it isn't uncommon for an employer to offer a graduate role to students who have already completed a placement or traineeship with them.

In the Education Science courses at Sapienza University of Rome, towards the end of their traineeship, students are required to write a final report in which they describe what activities they took part in and how they carried them out. The aim of the report is to evaluate what has been learned from experience in terms of knowledge, soft skills, techniques, behaviour and motivation. The final report is a requirement in order to obtain academic credit for the traineeship. The traineeship report should not be a formal task for the students to be assigned university credits, but it should be considered by students an opportunity to re-think the experience. Indeed, we strongly believe, according to literature, that a traineeship model based on reflection contributes to training reflective practitioners, able to engage in a process of continuous learning.

9.2. Reflective practice as a way of understanding and learning from experience

> "When we undergo an experience, this does not always lead to new insights and new learning. [...] If we do not pay attention to it the opportunity for new learning will not happen. Experience may underpin all learning, but it does not always result in learning. We have to engage with the experience and reflect on what happened, how it happened and why. Without this, the experience will tend to merge with the background of all the stimulants that assail our senses every day. There are a lot of methods, tools, techniques for reflective practice and this can be used individually and in a group. People, as we saw earlier, reflect in many ways: through a discussion with their peer or with their supervisor, writing in a journal to describe and analyze what they do, think and feel or writing a report".[4]

In the Education Science courses at Sapienza University of Rome, the final traineeship report will be evaluated by the academic tutors to assess whether the student has developed the ability to reflect on the experience and to integrate it with previously owned knowledge and skills. Writing the report is an important tool for reflective

[4] Beard, C., & Wilson, J.P. (2006). *Experiential learning: a best practice handbook for educators and trainers*, p. 20. (2nd ed.). London and Philadelphia: Kogan Page.

training, because it allows a student to re-elaborate experience, to activate the process of "reflection on action" defined by Schön (1983), thus becoming an epistemic writer that fosters growth of understanding and knowledge (Salerni, Sposetti, Szpunar 2014). As we saw, "reflective thinking", as Dewey defines it, is the main tool that supports scientific inquiry.

In other words, a traineeship model based on reflection, also through writing, contributes to training reflective practitioners, able to reflect on actions, in order to engage in a process of continuous learning. In this way, in fact, there is a continuous interaction between theory and practice in which each of them informs the other. Reflective practice, a crucial tool in work-based learning settings, where people learn from their own field experiences rather than from formal learning, can be a very effective source of personal and professional development (Schön, 1983, 1987).

In summary, reflection, as we have discussed, gives meaning to experience and promotes a deep approach to learning because it encourages trainees to look at situations from different perspectives as they analyze their lived experiences.

As we discussed above, it's possible to learn from traineeship experience at different times:

- concurrently, namely learning from an event at the time it occurs;
- retrospectively, namely learning by looking back at an event and analyzing it (what Schön termed *reflection-on-action*);
- prospectively, namely learning more about a past event thinking about how to behave in future situations.

Regarding our degree course, analyzing the students' traineeship reports we noticed the lack of reflective writing in almost all of them (Salerni, Zanazzi, 2018) [5]. The traineeship reports written over the

[5] According to Jenny Moon (2006), who describes reflection as a "form of mental processing", there are four levels of depth of reflection. *Descriptive writing* is merely centered on "what happened" and contains only a few reflective elements. This is more of an account than a reflection. There is little attempt to focus on some selected issues, giving similar "weight" to all topics. Generally, stories are told from only one point of view; ideas are linked by the sequence of facts rather than by meaning; there might be references to emotional reactions, but they are not explored in depth. The

years have shown the difficulty for most students to go beyond description and reflect on their experience, to take a distance from events, to question their and other people's actions and to use analytical skills and critical thinking. The majority of them in fact tend to reflect at a more descriptive level.

Over the years we tried different strategies to help students improve the reflective skills. After verifying the difficulty of the trainees to write down their reflections on the experience, we've changed the guidelines for the traineeship report, we've administered individual interviews with students starting from some input questions and finally, we've formed focus groups as a strategy to foster reflective thinking. As we have discussed, reflection engages multiple actors in a process of inquiry which produces new understandings and sustains individual and collective practice. Focus group is based on Kolb' experiential learning cycle and Gibbs model

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student doesn't seem to have any doubt or critical incident that they want to bring up for discussion, nor they seem to question their behaviors and actions in any way. In the second stage, *Descriptive writings, with some reflections*, they tend to be more focused and signal points for further reflection: besides an account of "what happened", there are doubts, questions and issues to be discussed. Within that there is some reflection involved, although it is very limited. However, this type of writing still shows little analysis of the events: the reflection isn't sufficiently deep to let learning happen. There are statements showing awareness about learning, but they are very generic and often sound rhetorical. The student doesn't show sufficient ability to create a "distance" from the concrete situations and to look at them critically. *Reflective writing* contains some descriptions, but it focuses on some relevant aspects to be analyzed in depth. This third stage of reflection is still descriptive, but is a lot more focused on actually reflecting on the experience, and typically features a lot more analysis than the previous stage. In this type of writing, one might be able to appreciate the existence of several alternative points of view on the same facts. There is a certain "distance" from the events, willingness to be critical, to question actions by the self and others. Emotions are recognized, and so is their significance and impact on behaviors. The student reflects on his learning referring to theoretical knowledge (to know), practical knowledge (to know how) and behaviours (how to be). Connections between formal and informal learning are established and explained. There are comments and reflections on how field experience might have impact on future career choices and why. The fourth stage of Moon's reflection model is *critical reflective writing*, the most comprehensive and desirable type of reflection. This type of writing contains reflections that might lead to a change in one's basic assumptions and "frames of reference". A metacognitive stance is taken (ie critical awareness of one's own processes of mental functioning – including reflection). The reflection is being undertaken from a removed perspective, and observations of learning being gained will be made.

(2008) [6], as inputs for sharing experiences. During the focus groups, which last approximately two hours, students who have almost finished or finished their traineeships are asked to reflect together on their lived experience. The sequence of inputs proposed in order to stimulate the reflection, is based on a progressive enlargement of the viewpoint, from a presentation of the context to a reflection on experience and on one's ways of acting and thinking. Following Kolb's model, we go from the *concrete experience*, to *reflective observation of the new experience*, a*bstract conceptualization* to *active experimentation.*

We think that *starting from experience* can be useful to help students reflect on concrete experience and on learning coming from it.

The first question to start the focus is as follows: "Can you briefly describe your traineeship experience?".

Next, we continue with questions regarding the capacity for *reflective observation* in which trainee discusses feelings and thoughts about the experience. During this stage each participant presents and reflects on a critical incident that has occurred in his/her professional practice. A critical (revelatory or significant) incident (case, episode, event, factor) is a non-ordinary and/or problematic event that produces a moment of surprise, disorientation, criticality in the person who lives it. (Cope, Watts, 2000; Butterfield et al., 2005). This stage is a way for students to integrate theory and practice and link their learning and reflection: "Do you remember a situation during your traineeship in which you encountered a problem? Can you describe it and explain what you did and how you felt, what others did, and how in the end the problem was faced and eventually solved? Can you recall a moment during your traineeship experience when you felt particularly useful? Can you describe the

[6] Gibbs' reflective cycle is a model for reflection that includes 6 stages: description of the experience; feelings and thoughts about the experience; evaluation of the experience, both good and bad; analysis to make sense of the situation; conclusion about what you learned and what you could have done differently; action plan for how you would deal with similar situations in the future, or general changes you might find appropriate.

circumstances, what you did, how you felt and the motivations that led you to feel in this way?"

Then we move on to questions that encourage *abstract conceptualization.* These questions are very important, particularly for the reflective writing and the connection between theory and experience (thinking about three "areas of competence", that is "knowing", "knowing how to do" and "knowing how to be": "Can you bring examples from your field experience showing your personal growth and skill development? At the end of your traineeship experience, what do you think about your professional future after university?". A traineeship indeed, is an opportunity offered to orient students to a professional choice through an experience of "protected" work, with responsibilities and tasks different from those typical of a real work context (Schön, 1983).

The fourth stage of the Kolb's cycle, *active experimentation*, happens when the trainees apply what they have learnt, and reflected on, to their future actions. It is precisely what Killion and Todnem (1991) called *reflection-for-action,* the desired outcome of the first two types of reflection. We propose, therefore, to add a question for the trainees: "How can I improve next time? What can I do differently?". Of course, as we said at the beginning, the experiential learning cycle never ends: the last stage flows into the first one, thanks to the translation of it into a practice that is more reflective, more aware and competent.

In our experience, the discussion among peers and the narration of practices have proved to be valid formative resources. At the end of the focus group, many students are able to go beyond descriptive writing and to reflect on their experience. This way, their ability to integrate theory and practice becomes one of the main goals of curricular traineeship and improves.

From what we have experienced through focus groups, we can say that for students with greater difficulty in writing and in reflecting critically on the experience, in addition to comparison with peers, it is also useful to confront with the university tutor after writing the report. The university tutor helps students to reflect on the text, to identify the points that they have to analyse critically.

In conclusion, we believe that the model of critical reflection is a good way for practitioners to learn from their own experiences as

Fook and Gardner (2007) say. Through the discussion about the experience lived with colleagues, critical thinking and the awareness of different ways to deal with situations and to promote change are developed. This model of reflection, as students also declare at the end of the focus, is a way to develop new knowledge and learn from their own experiences, a way to integrate and give sense of one's own assumptions, expectations and perceptions and to learn theory from practice.

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10. International indicators and strategies for education

Giorgio Asquini

The issue of education indicators and their relationship in education policies is certainly very complex. We will try, in the available space, to provide an orientative overview on the evolution of the OECD system of indicators, also considering the contribution of international surveys on education, and the use of indicators for the definition of European Community strategies for education and training.

10.1. A little history of the indicators

Although the reflections on the data concerning the educational systems can be traced back to decades before, in the wider context of the debate on social indicators (Wyatt, 1994), the first important act for the definition of a comparative and international education indicator system was in 1973, when an OECD working group released a short document entitled *A Framework for Educational Indicators to Guide Government Decisions* (OECD, 1973).

From the title, the authors' choice and their main purpose appear clear, as they acted on explicit mandate of the OECD: to provide precise information on the functioning of the educational systems, so that political decision makers could act to improve them. Like all innovative projects, the breadth of the proposal was striking, especially when compared to what will actually be achieved two decades later. There were 6 groups of indicators, from the most cultural type, *The contribution of education to the transmission of*

knowledge, to the more concrete one, *The effective use of resources in pursuit of the above policy objectives,* for a total of 46 indicators that should have described the impact of the education system on people's lives and on society.

The proposal followed the recent enthusiasm for the widespread use of indicators in other sectors (economy, health), in which the impact, that a reasoned series of comparative data between the different countries could have had on the definition of national policies, had become evident. However, the education sector was not infected by this enthusiasm and the OECD project was quickly abandoned due to a destructive mix of factors.

On the one hand there was no agreement on the usefulness of a system of international indicators to guide education and political decision makers looked with suspicion on the proposal, since they were more used to governing the present than to planning the future. There were good reasons for this apparently short-sighted vision, as most educational systems in the OECD countries had just crossed or were completing the process of mass education, with almost mandatory objectives and strategies (bringing everyone to school, progressively raising compulsory schooling, building new schools, hiring teachers), for which refined and comparative indicators were not needed to follow a widely marked path.

On the other hand, we must not forget that the early Seventies were hit by an important economic crisis, linked to energy problems, which reduced the resources available for education, therefore having precise and comparative data but not the resources for possible interventions of improvement, as it was considered useless.

The project was therefore abandoned and at the same time the educational research focused more on specific micro-analysis concerning the educational relationship, classroom teaching, individual learning, drastically reducing the commitment to quantitative research.

A decade was needed to reopen the debate on the usefulness of a system of indicators and an important turning point was the publication of *A Nation at Risk* (NCEE, 1983), a ruthless self-criticism concerning the US educational system, from which international comparative needs clearly emerged to understand and improve the educational system, for example the need for "comparing American

schools and colleges with those of other advanced nations" (p. 7). The first of the analyzed risk indicators was "International comparisons of student achievement, completed a decade ago, reveal that on 19 academic tests American students were never first or second and, in comparison with other industrialized nations, were last seven times" (p. 11), which highlights the need for comparison, and therefore for specific indicators, concerning the results of education.

Also, in the 1980s the resonance of the IEA's surveys − the International Association for the Evaluation of Educational Achievement − (whose purpose was certainly not to create a system of indicators but to provide the participating countries in the surveys and their opinions public, comparative data on the results of education) grew.

Starting from the self-criticism of the United States, the political need to obtain punctual and reliable data to act on the education system was spreading, also because the economic resources allow it to do so.

As regards educational research, the long period dedicated to microanalysis allowed the definition of important meta-analytical reviews (Haertel et al. 1983), whose purpose was to understand if there were generalizable factors, on which to act, to improve educational work. Among these factors, there were several concerning the functioning of the system, such as the financial resources, the division of responsibilities, the mechanisms of evaluation/assessment, the connection with the world of work. For these topics the comparative dimension would have allowed to verify the impact of the political choices for the functioning of the education system.

The astral conjunction of these different elements was completed in Washington D.C., in 1987, with a conference that held together the OECD and the United States Department of Education, in which a shared work of reflection and creation of a first series of international indicators of education was launched. From the operational point of view, various working groups, that had to deal with not simple problems, were created, such as the comparative modalities of data coming from very different sources and relating to different models of education, with the need to support many countries that had never collected data comparable to their own education system. The INES

(Indicators of Education Systems) programme was thus defined, in close relationship with the OECD through the CERI (Center for Educational Research and Innovation), whose purpose was precisely to build the OECD education indicator system (OECD, 1992a).

The laborious preliminary work was completed with the publication of the first edition of Education at a Glance (OECD, 1992b) and of the volume Making Education Count (OECD, 1994), which collect a series of essays illustrating choices, definitions and shared paths for the implementation of the OECD indicator system.

10.2. The evolution of the OECD system of indicators

The first editions of Education at a Glance, years later, showed the enormous progress made in recent years in the collection and elaboration of indicators. Compared to the 6 groups hypothesized in the 1973 document, the groups were only 3:

1. Context of Education (articulated in *Demographic Context* and *Social and Economic Context*);
2. Costs, Resources and School Processes (divided into *Expenditure on Education*, *Human Resources*, *Participation in Education*, *Decision Making in Education*);
3. Results of Education (divided into *Student Outcomes*, *System Outcomes*, *Labor Market Outcomes*).

The data presented were relatively up to date and refer at best to two years before the date of publication, another sign that many countries, as data providers, were progressively equipping themselves for their collection in different national realities, respecting the standards of quality defined by INES. The grouping of countries, of a geopolitical type, used for the display of data in table format, was particular: North America, Pacific Area, European Community, Other Europe − OECD, with the addition of the average of the countries (still not defined OECD average). Instead, in the graphs the countries were sorted according to the value relative to the indicator. Finally, the first editions were bilingual, English-French, and only two separate volumes have been published since 2005 (the title of the French version is *Regards sur l'éducation*).

The first important change in the structure of the indicators happened with the 1996 edition, with even 7 groups. In some cases, a separation of a previous group occurred, for it was too large (the resources are separated by participation), with the creation of original groups (*School Environment and School/Classroom Processes*, or *Student Achievement and Adult Literacy*). To facilitate a diachronic reading of the indicators, in the index, the connection for each indicator was reported with the previous edition of Education at a Glance. The editorial quality of the figures clearly improved and made it easier to read the data, which however, continued to be generally dated two years before publication.

In 1998 the groups went back to 6, with the reintegration of *Student achievement and social and labor market outcomes of education*. There was also a change in a previous group dedicated to *Graduate output of educational institutions* which became *The transition from school to work*. In general, in each new edition there were a fair number of new indicators, a sign of new availability of comparable data, but which still make it difficult to define a historical series of data. The use of different information sources, compared to the member countries, was continuously extended, with data from surveys of the United Nations, UNESCO, Eurostat, or from surveys coordinated by INES (NESLI, LSO) or carried out by the OECD (SIALS, and shortly after PISA).

The impression of a gradual adjustment came with the 2000 edition (after missing that of 1999) with a new division between *Individual, social and labor market outcomes of education* (which also includes *The transition from school to work*) and *Student achievement*. It should be noted, however, that the number of new indicators in the first four groups confirmed with respect to the previous edition was limited.

The final stabilization took place in the 2002 edition, with the definitive (at least to date) structuring of four groups: a) The output of educational institutions and the impact of learning; b) Financial and human resources invested in education; c) Access to education, participation and progression; d) The learning environment and organization of schools.

Groups B, C and D were a confirmation of the previous ones, but the novelty of group A, from which the references to contexts

disappeared (definitively reduced over the years, but kept in continuity with the first editions), was important and collects all the result indicators. The choice was important, because it reversed the traditional logic of considering the results of the instruction as the end of a process, instead of it considered them as a starting point, assigning to the other indicators a more interpretative function of the results. In this choice, the PISA survey (which we will discuss shortly) certainly has an important role, with its results for the first time in this edition of Education at a Glance. The OECD wants to enhance these results by opening the collection of indicators, but specifies a method: starting from the comparison of the results to go back to the causes of the differences related to aspects of financing, participation and educational environment.

Another small but significant change comes from the 2007 edition of Education at a Glance. The title of each indicator is reformulated in interrogative form, for example the indicator A1, which was *Educational attainment of the adult population,* becomes *To what levels have adults studied?* This is to strengthen the intention of OECD-INES to consider the indicators as possible information supports to answer questions regarding the education system.

In each of the 4 groups of indicators there are periodical innovations, with new data that enrich the information framework, even though most of the indicators are now stable and allow trend analysis. In particular, group A on education outcomes had progressively been enriched. While maintaining the simple comparison concerning the educational qualifications and the related effects on the working status, the growing availability of data from international surveys has allowed us to compare the results in terms of performance achieved in different fields of literacy. In addition, attention is added to the social outcomes of education (Asquini, 2018), represented by the relationships between educational level and personal life habits (perception of well-being, level of anxiety, smoking habits, level of obesity) or social behavior (voluntary activities, political participation, environmental sensitivity).

Progressively updated data was also improved, which in recent editions is very often related to the year before publication, with the exception of financial indicators, usually updated two years earlier. The latest innovation, introduced in the 2018 edition of Education At

a Glance, was the inversion of groups B and C, with the indicators of *Access to education, participation and progression* that are placed ahead of those of *Financial and human resources invested in education*, to signal the growing relevance, according to the OECD, of data regarding participation in the different levels of education with respect to financial aspects.

Over the years the number of partner countries has also expanded, although they are not part of the OECD, they supply their data and are included in the indicators, so the current information framework refers to 35 OECD countries and 11 Partner countries.

10.3. The role of educational surveys

Immediately after the publication of the first edition of Education at a Glance, the OECD was faced with a problem of availability and updating of data regarding the result indicators. The outcomes of the education related to the students' performances were overseen, internationally, by the various IEA surveys, which however, from the OECD point of view, were not entirely suitable for providing data to the indicator system. The problems concerned two specific aspects: the construct of the IEA surveys always started from an analysis of curricula generally concerning the final classes of the different education cycles, for which the comparison was of a very specific type linked to the few elements of the programmes shared by the participating countries, therefore not always being referable indicators to the quality of the whole education system; moreover, the periodicity of the IEA surveys was not well defined, with studies that lasted many years, sometimes not re-proposed over time, or re-proposed at a long time distance, thus not allowing trend analysis and more generally, a constant feeding of the indicator system. Consequently, even if in the first editions the results of the IEA investigations obviously just ended up, the OECD began to design original investigations to collect system data periodically.

The first field of intervention chosen was the less attended education sector, also by IEA, which is that of adults. Thus, in 1994, IALS (*International Adult Literacy Survey*, OECD-SC 2000) was launched in collaboration with Statistics Canada, which initially involved only 9 OECD countries, but the success of the survey first

convinced 5 other countries (1996) and finally other 9 countries (1998) to carry out the survey on adults also in their education systems. Without seeing into the details of the results of the IALS survey, we see how these were immediately put (from the 1996 edition of Education at a Glance) into the indicator system, and periodic updates on the new participating countries found space in subsequent editions, completing the results of performance provided by IEA, that in the same years carried out the important RLS survey, (*Reading Literacy Study*), and TIMSS (*Third International Mathematics and Science Study*), for primary and lower secondary school levels.

Concurrently with the implementation of IALS, the OECD began to design a specific survey for students, analyzing the problems encountered in the study of adults (for example the staggered participation of countries) and trying to solve the problems detected for IEA surveys. Hence PISA (*Program for International Student Assessment*) was born, with a completely original framework: the population examined does not refer to education cycles, but to the end of compulsory education (15 years), beyond which not all the population is present in the school; in the same survey three specific literacy are examined (*Reading*, *Mathematics*, *Science*), one of which is analyzed in more detail, with the possibility of inserting other literacy, always free from disciplinary programmes; there is a basic three-years cycle and a nine-years wide cycle for each literacy analyzed in detail (this last cycle guarantees complete generational turnover in almost all countries).

These three aspects guarantee the overcoming of the limits of the IEA surveys and allow to constantly feed the Education at a Glance indicator system, as explicitly mentioned in the introduction of the survey Framework:

> "The assessments will provide various types of indicators:
> - basic indicators providing a baseline profile of the knowledge and skills of students;
> - contextual indicators, showing how such skills relate to important demographic, social, economic and educational variables;
> - indicators on trends that will emerge from the on-going, cyclical nature of the data collection and that will show changes in outcome levels, changes in outcome distributions and changes in

> relationships between student-level and school-level background variables and outcomes over time" [1].

To carry out the *assessment* (we note the lexical difference with respect to the *evaluation* carried out by IEA) PISA largely exploits the questionnaires (for the student, for the school and subsequently for the parents and for the teachers, the latter in a still experimental version) which allow to gather a lot of useful information for the interpretation of the Literacy results, both as regards the individual variables, and for the system aspects that can explain trends and differences. Moreover, the cognitive tool is very complex, because it must consider at least three literacies, one of which analyzed in detail, for which it is divided into 13 different issues with further proof that the objective of the assessment is the system as a whole, not the individual student. It must be remembered that all these innovations are communicated in advance (OECD, 1999) with respect to the conduct of the survey, in the Framework, which explains how the model of the preventive comparison of programs used by IEA has been exceeded. Framework that is regularly updated before each cycle and enriched with new fields of literacy, such as *Problem Solving* (2003, 2012), *Financial Literacy* (2012, 2105), Collaborative Problem Solving (2015), *Global Competencies* (2018), *Creative Thinking* (2018).

Also the results of PISA enter, as soon as available (2002), in Education at a Glance, succeeding those of IALS and alongside those of the new IEA surveys, which meanwhile took up the challenge of PISA, working on the periodicity of its two main surveys, becoming four-years (from 1999, TIMSS, with the change from *Third* to *Trends* of the acronym) and five-years (from 2001, PIRLS, *Progress in the International Reading Literacy Study*, ideal spin-off of RLS). But while the IEA results come only in the result indicators of Group A of Education At a Glance, PISA is an inexhaustible source of data for all groups of indicators, including those of financial resources (to define the relationship between the amount of funding and results of performance), of participation in education (with the correlation between the frequency of pre-primary levels and the performance of

[1] OECD (1999). *Measuring Student Knowledge and Skills: A New Framework for Assessment*, (p. 10). Paris: OECD.

students 15 years old), of the learning environment (with the comparison between the times of compulsory and optional education). In fact, in every three years of Education at a Glance following the publication of the results of a PISA cycle, many indicators can be found that use these results.

The analysis of the PISA results as indicators has started a series of researches that deepen the functioning of an education system starting from the PISA results. The first example was a German report, whose summary was published by the OECD (OECD, 2004), with an illuminating title: *What Makes School System Perform? Seeing School System Through the Prism of PISA*. The German school authorities, very affected by the negative results of their 15-year-olds in PISA 2000, analyzed 6 educational systems that had instead achieved good results, with the intention of drawing inspiration to act on their own education system, improve it and verify the effect on PISA results. The verification was positive, because in the subsequent cycles of PISA the German results have constantly improved, thus realizing the expectations of the OECD about a careful use of the indicators aimed at innovation.

The experience gained in PISA has enabled a similar programme to be activated for adults since 2011-12, with the PIAAC survey (*Program for the International Assessment of Adult Competencies*), which intends to continue the experience of IALS (and ALL, Adult Literacy and Life Skills, carried out in 2003 but in a small number of countries), with some PISA standards, such as cyclicality, in this case a decade (the next PIAAC survey will take place in 2021-22).

Finally, we need to mention a third OECD survey that found a space between the indicators, TALIS (*Teaching and Learning International Survey*), launched in 2008 with a five-year basis, addressed to teachers to detect opinions and attitudes about teaching and learning processes, aspects that find regular space in the indicators of group D (Learning Environments).

10.4. Indicators and political strategies

The OECD's hope to see the indicators used by countries to define education policies has been fully implemented in European strategies over the last 20 years. After a preparatory work started in 1995 (CEC,

1995), in March 2000 the European Council, meeting in Lisbon, launched a strategy aimed "to become the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion (EC, 2000)". A fundamental role for its realization is played by the education sector, whose ministers defined in 2003 (EC, 2003), 5 main benchmarks to monitor the achievement of the strategic objectives set by the Lisbon strategy for education, to be achieved within 2010:

1. an EU average rate of no more than 10 % early school leavers should be achieved;
2. the total number of graduates in mathematics, science and technology in the European Union should increase by at least 15 % by 2010 while at the same time the level of gender imbalance should decrease;
3. at least 85 % of 22 years old in the European Union should have completed upper secondary education;
4. the percentage of low-achieving 15 years old in reading literacy in the European Union should have decreased by at least 20% compared to the year 2000;
5. the European Union average level of participation in Lifelong Learning, should be at least 12.5% of the adult working age population (25-64 age group).

These are precise commitments, precisely measurable through different indicators proposed by Eurostat and OECD (the fourth objective is measured with PISA data), commitments that should inspire national education policies to achieve common goals. The outcomes of the Lisbon Strategy are not positive, in fact only the second objective (the total number of graduates in STEM) is reached, well in advance, while for that of weak readers the final result is even worse than the starting one. For the other three targets, the overall improvement is lower than the targets set, but with clear differences between European countries, to signal the different actions undertaken in European education systems, not always successful.

The constant monitoring of the targets represents however one of the most important uses of the indicators, and for this reason at the end of the decade the European Commission launches the new

Europe 2020 strategy (EC, 2010). Also, in this case specific targets are set for education, but this time with the ambitious premise of a common programme for their achievement, defined Education and Training 2020 (EC, 2009).

The new benchmarks to be achieved in the decades are:

1. an average of at least 15% of adults should participate in lifelong learning;
2. the share of low-achieving 15-years olds in reading, mathematics and science should be less than 15%;
3. the share of 30-34 years old with tertiary educational attainment should be at least 40%;
4. the share of early leavers from education and training should be less than 10%;
5. at least 95% of children between 4 years old and the age for starting compulsory primary education should participate in early childhood education.[2]

In some cases, this is an update of targets already established for the first strategy, but the target relating to early schooling stands out, taken from the PISA survey, in which the frequency of childhood education is associated with good results in output from compulsory education. It can be seen that all levels of education are involved in these targets, and a very ambitious educational achievement goal was added later:

6. to reach the employment rate of recent graduates of 82%.

The outcomes of ET 2020 will soon be assessed, but the two European strategies show that the indicators can become an important source of information to inspire and assist the choices of policy makers about education, providing the public with control mechanisms to verify effectiveness of the actions taken to achieve the results.

We close this quick overview on the indicators with a key definition of Norberto Bottani and Albert Tuijnman, which still today

[2] EC (2009). *Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020')*, 2009/C 119/02, Brussels.

guides the work of INES and the publication of Education at a Glance, a definition that should always be considered by every policy maker who really wants to improve the education system of their country:

> "The development of a set of international education indicators is not merely a technical exercise planned and controlled by statisticians, but first and foremost it is a political one. An indicator is not simply a numerical expression or a composite statistic. It is intended to tell something about the performance or behaviour of an education system and can be used to inform the stakeholders decision-makers, teachers, students, parents and the general public. Most importantly, indicators also provide a basis for creating new visions and expectations"[3].

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11. Thinking intelligently to promote a democratic society

Giordana Szpunar

The present paper concerns the topics of prejudice and stereotype and the scientific and reflective attitude as a useful strategy for their reduction. The topic is particularly important because it is closely related to the issue of social inclusion and respect for minorities: in fact, prejudice and stereotypes are phenomena underlying discrimination attitudes and social exclusion processes.

Prejudice is defined by psychosocial research as "an individual-level attitude (whether subjectively positive or negative) towards groups and their members that creates or maintains hierarchical status relations between groups" (Dovidio et al., 2010, p. 7). Prejudice is characterized by three dimensions: cognitive dimension, affective and motivational dimension and behavioral dimension. The cognitive dimension includes stereotypes and beliefs and the way in which the human being perceives, knows and judges others. The affective and motivational dimension consists of feelings, emotions and motivations based on which the human being tends to judge outgroup members negatively, and to defend ingroup members. The behavioral dimension concerns attitudes, hostile intentions and actions that are carried out in line with shared prejudices and stereotypes. More specifically, stereotypes and beliefs, together with emotional responses, cause the hostile and discriminatory behavior. Stereotype, as the "cognitive core" of prejudice, is defined as "a set of qualities perceived to reflect the essence of a group", a set of "associations and beliefs about the characteristics and attributes of a

group and its members that shape how people think about and respond to the group" (Dovidio et al., 2010, p. 8).

Stereotype is the result of the categorization process: the world is extremely complex and full of stimuli; to simplify the complexity of the context and to order and classify objects, people and events, the human brain categorizes the stimuli, by similarity and difference (Cohen & Lefebvre, 2005). Categorization is a fundamental process to human cognition, because it allows to "organize and structure our knowledge about the world". In other words, it makes the immense diversity of individual entities that we encounter in daily life manageable, transforming the "world from chaotic complexity into predictable order". Social categorization is a similar process: on the basis of some social cues (e.g. ethnic traits, demographic features, social roles) we can make inferences about a range of relevant and important issues. We can predict behavior, intentions, skills, and personality traits of people. This allows us to always know how to behave and thereby reduce anxiety through a more efficient control and prediction on the context. Unlike categorization in general, social categorization leads us to position ourselves with respect to the category and to establish dividing lines between groups (ingroup and outgroup) (Bodenhausen, Kang & Peery, 2012, pp. 318-319). Therefore, social categorization also has an important function in the construction of social identity (Tajfel, 1981).

Social categorization gives rise to stereotypes. If stereotypes are mental representations of real differences between groups (e.g. cultural stereotypes about food preferences) then they perform the useful function of cognitive schemas, used by social perceivers to process information. Instead, if stereotypes are formed about various groups independently from real group differences (e.g. religion, gender, ethnicity) then they become a set of «beliefs about the characteristics, attributes, and behaviors of members of certain groups and theories about how and why certain attributes go together». Therefore, in the first case, stereotypes operate allowing easier and more efficient processing of information about others. In the second case, stereotypes have an enormous potential for error (Hilton & von Hippel, 1996). Moreover, when the stereotype corresponding to the category is associated with judgments on values, it can become an obstacle to social relations and mutual

knowledge, and dangerous and harmful for the community. Indeed, one version of the social identity theory (SIT) assumes that, because of social categorization, people show an ingroup bias, or tendency to favor their own group relative to outgroups (Tajfel et al., 1971). Moreover, people perceive greater similarity among the outgroup members. This similarity leads people to dehumanize outgroup members and justify intergroup prejudice and conflict and discrimination (Cortes et al., 2005). Dangerousness of stereotype increases depending on the degree of rigidity, social sharing, generalization and the intensity that characterizes them. Furthermore, stereotypes, when activated, are protected by a series of automatic and unconscious processes that make them resistant to change and more easily accessible. In fact, according to the theory of cognitive dissonance, people avoid information that increase dissonance on and favor information consistent with their attitude and behavior (Festinger, 1957). This activates selective perception processes, which lead people to seek consistent information not yet present (Selective Exposure; McGuire, 1969), to heed consistent information once it is there (Selective Attention; Olson & Zanna, 1979), and to translate ambiguous information to be consistent (Selective Interpretation; Vidamar & Rokeach, 1974). In turn, these selective perceptions' processes produce several automatic cognitive biases (intended as cognitive errors).

Discriminatory and hostile behaviors exhibited consistently with the stereotype are ethically reprehensible and have a negative effect on the stigmatized person. Identity threat is produced when a stigmatized person perceives stereotype as being potentially harmful to their social identity and as exceeding their resources to cope with those stimuli. Identity threat leads to involuntary stress responses such as anxiety, vigilance to threat, and decreased working memory (Major & O'Brian, 2005). Therefore, stigma affects self-esteem, school and academic achievement (Rydell et al., 2010; Aronson, Quinn & Spencer, 1998), and health (Allison, 1998). Moreover, stigma is related to reduced access to housing, education, and jobs (Braddock & McPartland, 1987). Stigmatizing attitudes are often directed towards

minority-groups members (ethnic minorities, disabled people, LGBTQ [1] people, women etc.).

For these reasons, different areas of human sciences have focused their attention on the origin and transmission of prejudice and the strategies for its reduction. One of the most active areas on the topic is psychosocial research. The different explanations of the phenomenon of prejudice prefer alternatively cognitive aspects or emotional aspects and consider alternatively individual or groups as subjects.

Initially, roughly from the 20s to the 50s, researchers considered social prejudice as an individual attitude, the result of a pathological personality. In the 70s the research focused on the ordinary aspects of prejudice, related to cognitive processes and group dynamics. In the 90s multidimensional explanations took hold; the new technologies, that measure and analyze mental processes, made it possible to detect implicit, automatic and unconscious aspects of individual attitudes.

The phenomenon of prejudice is generally characterized by two dimensions, the cognitive and the motivational. The main theories of the explanation of prejudice refer to social categorization, to individual and personality differences, to conflicts between groups, to the construction of social identity (Haslam & Dovidio, 2010).

Considering mainly the motivational dimension, some theories stand at an intra-individual level of analysis, explaining the prejudice through individual and personality processes, others are at a level of inter-individual analysis, explaining the prejudice through socio-economic factors or psychosocial processes.

The explanations on an intra-individual level of analysis are based on Freud's psychodynamic theory. In general terms, restrictions on sexual and aggressive instincts cause frustration and accumulation of emotional energy. This energy must be released, and this provokes aggressive attitudes towards the source of frustration or towards other targets (often people who are part of minorities or deviant categories). The discriminatory and hostile attitude towards minorities therefore depends on an authoritarian personality

[1] Lesbian, Gay, Bisexual, Transsexual, Queer, Intersex.

(Adorno et al., 1950) or on a causal relationship of frustration and aggression (Dollard et al., 1939). These theories have been criticized because they do not explain some aspects of the phenomenon (for example the increase of prejudice in specific groups or in specific historical periods). However, they have had interesting developments in more recent proposals that underline the role of social norms and standards in the transmission of authoritarian attitudes (Altemeyer, 1998), correlation between characteristics of the personality in childhood and political orientation in adulthood (Block & Block, 2006), the influence of parenting styles and individual temperament on political orientation in adulthood (conservative or liberal) (Fraley et al., 2012).

The explanations on an inter-individual level of analysis claim that prejudice is a process that originates and develops at social level, within the functional relationships between groups. According to these theories the perceived group competition for resources implies efforts to reduce the access of other groups to resources. The attempts of a group to obtain favorable outcomes for itself are perceived by the other group as a frustration of their own goals. This competitive and conflicting relation between groups is expressed in discriminatory and aggressive attitudes towards the external group (Sherif et al., 1961).

From the cognitive point of view, the individual knows and understands the world by processing the stimuli and organizing them into categories by similarity and difference (Cohen & Lefebvre, 2005). Categorization allows to control the complexity of environment because we can insert a potentially unlimited number of stimuli in a limited number of categories. It is an indispensable tool, but it involves risks because social categorization, from which the stereotype derives, profoundly influences social perception, affection, cognition and behavior (Dovidio et al., 2010, p. 14).

Tajfel's theory of social identity is the one that has contributed most to keeping together the different levels of analysis (individual, interindividual, intergroup and social) and the different factors (cognitive and motivational) of the phenomenon of prejudice, representing it as an aspect of social cognition. Social categories feed on themselves so that perceptions are coherent with cognitive representations. Furthermore, the differences between the members

of the same category are underestimated ("they are all the same") and, at the same time, the differences between the groups are overestimated and amplified ("we are not like them") (Tajfel & Wikes, 1963; Tajfel, 1969). Intra-categorial assimilation and inter-categorial differentiation have two consequences: from a cognitive point of view, people remember more positive information about the ingroup and more negative information about the outgroup (Dovidio, 2010); from an emotional point of view, people develop a more positive feeling towards the members of their group (ingroup) than towards the members of the external group (outgroup) (Tajfel & Turner, 1986). Social categorization automatically and unconsciously activates cognitive distortions (bias) which, in an attempt to gather information consistent with the stereotype, confirm and feed the stereotype itself (Devine, 1989). These processes influence the behavior of people who will be more inclined to help the ingroup members than outgroup members. Often stereotypes and prejudices lead people to take a hostile attitude towards outgroup members. It follows that people affected by injuries suffer a series of negative consequences in terms of psychological health, well-being and material access to resources: the attribution to an individual of negative characteristics discriminates him and negatively influences the perception of his social identity; the threat to identity generates stress responses and the activation of coping strategies that, in general, influence self-esteem, performance (at school, at work) and health (Major & O'Brian, 2005; Steele, Spencer & Aronson, 2002).

Moreover, since the 50s, psychosocial research has experienced several prejudice and stereotype reduction strategies. Some strategies are more effective on the affective dimension of prejudice; other strategies are more effective on the cognitive dimension. The main prejudice reduction strategies are four.

The contact hypothesis

Allport (1954) first proposed one of the most important and effective prejudice reduction strategies, trying to identify the conditions that favor the stereotypes change process: the contact hypothesis. The contact between individuals belonging to different groups, possibly characterized by real and thorough personal knowledge, long duration, status of similarity between individuals,

presence of a common purpose and therefore of a cooperative context, represents a powerful means to reduce prejudice, hostile behavior and conflict between groups, and to facilitate processes of acceptance and mutual understanding.

Experiments conducted on the contact hypothesis over the years have shown conflicting results (Amir, 1976). A recent meta-analysis shows that the preconditions hypothesized by Allport, and other researchers after him, optimal to reduce prejudice, would not seem to decisively influence the relationship between contact and prejudice (Pettigrew & Tropp, 2006). However, in many experiments, the contact is related to a more favorable attitude on the part of the majority group towards members of minority group, demonstrating that actually the contact, in some contexts, is an effective prejudice reduction strategy (Brown & Hewstone, 2005; Turner et al., 2007). The effectiveness of contact would be based on emotions felt for each other (anxiety, fear, sense of threat, anger). Therefore, the contact influences the emotional aspects of prejudice.

Empathy

Empathy is a process that allows deep understanding of the condition of another person and his inner feelings and experiences. Empathy consists of cognitive and affective elements: cognitive or intellectual empathy refers to the cognitive process; empathic empathy or emotion refers to the affective aspect of the empathic experience (Davis, 1994; Duan & Hill, 1996). The first means intellectually taking the role or perspective of another person; the second means responding with the same or parallel emotion to another person's emotion. Intergroup attitudes (or feelings towards outgroups) can be improved if people are encouraged to adopt the perspective of an outgroup member (Batson et al., 1997; Galinsky & Moskowitz, 2000; Vescio et al., 2003; Batson & Ahmad, 2009).

Categorization, decategorization, recategorization

The different categorization-based models of bias reductions act on the cognitive dimension of prejudice and aim to change the perception of the social context and groups. They assume that people can belong simultaneously to several groups. For example, according to the common ingroup identity model, stereotyping and prejudice

are significantly reduced when the members of the different groups are able to perceive themselves as members of a common group, to see each other's similarly, and to make friends with each other (Gaertner & Dovidio, 2000). For recategorization and decategorization, reducing the salience of the original group boundaries is expected to decrease intergroup bias (Gaertner & Dovidio, 2009). To sum up, the different strategies based on categorization attempt to make explicit and enhance the complexity of individual identity that involves the simultaneous membership of everyone to multiple groups. This leads to:

- breaking the monolithic outgroup, so that intra-categorial assimilation and inter-categorial differentiation tend to fade (Crisp & Hewstone, 2000);
- making the definition of self complex, leading to the perception of greater social heterogeneity of the environment (Roccas & Brewer, 2002);
- creating more inclusive "we" (in place of representation of groups as "us" versus "them") (Gaertner & Dovidio, 2000).

Self-Regulation of Prejudice

Self-Regulation of Prejudice (SRP) model (Monteith et al., 2002; Monteith & Mark, 2009) starts from the idea that stereotypes and implicit prejudices can be automatically activated, and they are used as a basis for the response to the situation (Devine, 1989). This response often results in a discriminatory behavior. If the prejudiced response and one's non prejudiced personal standard are discrepant, then self-regulatory outcomes are generated (Monteith, 1993). Awareness of discrepant response and self-regulatory outcomes lead to a behavioral inhibition, a negative self-directed affect and a retrospective reflection. This process results in the establishment of cues for control that should play a crucial role in possible future situations, activating a prospective reflection process that inhibits prejudiced responses and generates alternative responses (Monteith et al., 2002).

However, no strategy specifically considers the reflective skill. In this article we argue that the reflective attitude is a tool that could intervene effectively, right on the cognitive dimension of prejudice,

also promoting and supporting the other strategies of prejudice reduction.

The classical theoretical reference is John Dewey with *How we think* (1933), *Unity of Science as a Social Problem* (1938b) and *Logic, the Theory of Inquiry* (1938a).

Dewey devotes much attention to prejudice and analyzes it mainly from an epistemological point of view. The prejudice is "the acme of a priori. Of the a priori in this sense we may say what is always to be said of habits and institutions: they are good servants, but harsh and futile masters" (Dewey, 1906, p. 136). Prejudice is synonymous with belief, that is a type of thought that unconsciously assumes as mentally equipped what is transmitted through tradition, education, imitation and reaches conclusions in the absence of a mental activity that involves observation and collection and analysis of data (Dewey, 1933).

In his 1938 essay, *Unity of Science as a Social Problem*, Dewey is clear:

> "The scientific or reflective attitude is «freedom from control by routine, prejudice, dogma, unexamined tradition, sheer self-interest. […] It is the will to inquire, to examine, to discriminate, to draw conclusions only on the basis of evidence after taking care of gathering all available evidence. It is the intention to reach beliefs, and to test those that are entertained, on the basis of observed facts, also recognizing that facts are without meaning unless they point to ideas. It is, in turn, the experimental attitude which recognizes that while ideas are necessary to deal with facts, yet they are working hypotheses to be tested by the consequences they produce".[2]

And still "this attitude forms the sole ultimate alternative to prejudice, dogma, authority, and coercive force exercised in behalf of some special interest" (p. 280).

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[2] DEWEY, J. (1938b). Unity of science as social problem (p. 273). In O. Neurath, R. Carnap & C. Morris (Eds.), *Foundations of the unity of science. Toward an international encyclopedia of Unified science*. Chicago-London: University of Chicago Press.

In 1910, and then in 1933 (p. 200), Dewey tries to outline steps in the reflective thinking process. He suggests five phases of reflective thought:

> "(1) suggestions, in which the mind leaps forward to a possible solution; (2) an intellectualization of the difficulty or perplexity that has been felt (directly experienced) into a problem to be solved, a question for which the answer must be sought; (3) the use of one suggestion after another as a leading idea, or hypothesis, to initiate and guide observation and other operations in the collection of factual material; (4) the mental elaboration of the idea or supposition as an idea (reasoning, in the sense in which reasoning is a part, not the whole of inference); and (5) testing the hypothesis by overt or imaginative action". [3]

The ability to train thought is not achieved merely by knowledge of the best forms of thought, but several attitudes need to be cultivated. In particular:

- Open-mindedness that Dewey defines as "freedom from prejudice, partisanship, and such other habits as close the mind and make it unwilling to consider new problems and entertain new ideas";
- Whole-heartedness as a "genuine enthusiasm" that "operates as an intellectual force";
- Responsibility that means to "consider the consequences of a projected step" and to "be willing to adopt these consequences when they follow reasonably from any position already taken".

Therefore, reflective attitude in this sense should support several processes.

The reflective attitude can lead to awareness of our own stereotypes and prejudices. In this way, it can help decrease accessibility and automaticity of stereotypes and promote ability to observe and collect data in situations.

[3] DEWEY, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process* (p. 200). New York: D.C. Heath and Company.

The reflective attitude can support and practice the ability to change our own point of view and to take other's perspective. In this way, it can facilitate the empathy processes.

The reflective attitude can make more flexible categories that we use to understand and interpret the world. In this way, it can encourage the activation of re-categorization processes.

Thus, the reflective attitude could be a useful tool to reduce the access to implicit biases and correct explicit biases.

Reflective thought is not an innate quality, though all normal people have the potential germs to become scientific in their attitudes. Thus, the ability to think reflectively must be educated.

Educating reflective thinking allows individuals not only to acquire the ability to solve problems, but also to reduce access to stereotypes and prejudice and this could be an important contribution to building a truly democratic, more pluralistic and inclusive society.

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12. Educational research and language

Patrizia Sposetti

The conceptual acknowledgement of the role played by verbal language, a very powerful medium, for the construction of every knowledge system, as well as for the establishment of relationships and exchanges between individuals, dates back to ancient times. In this paper, it is impossible to recall, albeit briefly, the theories about language in the learning systems from the Socratic dialogue, to conception up to Dewey, Bruner and Vygotskij among the others. As evidenced by Chomsky (1988), it is no coincidence that language has drawn the attention of scholars over the centuries, since it belongs to every single aspect of human life.

12.1. Language involved in the construction of knowledge

Considering introduction, three suggestions are now introduced.

The first is the role played by dialogue in Socrates, intended as a source of knowledge. Plato's Cratylus is the most ancient work expressly dedicated to language and addressing the related problem, with a special focus on the correctness of names. The core is the relationship between words and things and, consequently, between language and knowledge, which − beyond the open solution suggested by the philosopher − points out the importance of the definition as well as of the proper use of words in every learning path.

The second suggestion is connected to the role played by language for the construction of knowledge, which questions the relationship between culture, verbal communication and cognitive development (Boscolo, 1997, p. 55.)

As clearly assumed by Vygotskij (1934) in the first decades of the last century, language is a social means of thought, which leads to the development of the individual's thinking. Therefore, the relationship between thought and language is a crucial subject investigated by social psychology, exceeding the methodological limits of natural sciences. In other words, language is a *trait d'union* which enables any relationship between the individual and culture (Bruner 1986). Thus, language allows for the interaction with the surrounding environment and, consequently, for the development of knowledge.

Eventually, the final suggestion is examined: through language men build and shape the realities shared within their culture, acquire knowledge and skills and share them with the others. Nevertheless, this sharing process partially relies on formal learning/teaching systems, through didactic relationships which are in turn conveyed by the use of language within a system of communicative exchange between many subjects.

12.2. Variation levels and characteristics of linguistic communication

Languages are a complex construct and vary not only in diachronic terms – i.e. from a historical point of view − but also in synchronic terms, namely from a sociolinguistic perspective. The main dimensions of synchronic variation of languages traditionally refer to three large classes which interact with one another (Berruto, 1993, 1995):

- *diatopic variation*, relating to the geographical area to which the speakers belong;
- *diastratic variation*, indicative of the social class of the speakers;
- *diaphatic variation*, referring to the specific communicative situation for which the language is used.

In the last thirty years, a fourth dimension has been added: *diamesic variation*, which refers to another criterion: the channel, i.e. the physical or environmental "medium" (μέσος).

In this regard, the reference to diamesia is particularly interesting because it refers to the written or spoken language. This use turns out to be particularly important compared to the other dimensions, since it is a transversal polarization: it crosses the other dimensions and is crossed by them. In this sense, diamesia is upstream of the geographical origin, the social class of the speakers and the specific communicative situation; therefore, it addresses the relationship between orality and writing by considering the differences between these forms in terms of both production and reception, including reading and listening.

Linguistic communication is characterised by the presence of some essential factors: message and speaker (also called sender or addresser), receiver, message, context, code and channel (Jakobson, 1963.) Every linguistic act involves a message, a content of the communication as well as some circumstantial factors bonded by variable relationships.

Basically, the message is the text produced by a subject through a sign system (code) and sent to a receiver through a physical medium (the channel) within a context defined by the external circumstances of the communication; moreover, depending on the specific situations, the elements that make up communication take on a significance – a "salience" in Roman Jakobson's words – which varies from time to time, leading to different functions, in particular:

- Sender − emotive or expressive function: its aim is the expression of the sender's emotions. This typical function is mainly found in the text clearly oriented towards the receiver and is characterised by the use of interjections and, according to Jakobson, "somehow gives life to all our expressions at phonic, grammatical and lexical level. [...] Those who use expressive elements to express irony or disdain are providing clear information";
- Receiver − conative function, which directly engages the receiver to trigger a certain behaviour, for example through imperative or exhortative sentences;
- Channel – emphatic function through which the sender draws the attention of the receiver and controls the physical medium,

verifying or interrupting the contact with the receiver through expressions like «Are you listening to me?», «Can you hear me?», «Can you repeat?», «What did you write here?». This function also includes the stereotyped speech forms, such as greetings or wishes, which just open, continue or close the dialogue between the interlocutors;

- Context − referential (or cognitive or denotative) function, where the message is oriented to the physical communication context outside the text conveyed to the receiver basically through descriptions, without any emotional involvement. This function is characterised by the use of the third person;
- Code – metalingual function, which refers to the sign system used, where the sender and the receiver must check if they are using the same code, for example through sentences such as "What do you mean by this sentence/word/expression?";
- Message – poetic function, where the attention is focused on the text, on its linguistic features − as happens with poems, a political motto or an advertising slogan − when rhythm plays a key role.

12.3. Linguistic communication in educational contexts

In learning-teaching situations, linguistic interactions involve different dimensions relating to the use of language as well as various factors.

Actually, this is a very broad framework within which, starting from the dimension concerning communicating in learning contexts, two extremely important conceptual areas go hand in hand: the co-construction of shared knowledge and the social and cognitive development of the group, considering the complex effects generated by an effective communication (figure 12.1).

This model considers both the nature of language intended as a crucial element for the construction of knowledge and the importance of the aspects most connected with the development of the social dimension. Therefore, it explicitly highlights that, as for the use of language in learning and teaching situations, it should be necessary to take into account both the need for the transmission of contents – including the disciplinary ones – as well as the need to

ensure that this transmission enables the interactions and the growth of the group.

The importance of the communication style and of the register used in the model is particularly evident. However, the importance of these elements has been evidenced by scholars only relatively recently. It is no coincidence that the idea of "communicative competence" is taken from the ethno-anthropological field by Dell Hymes who − contrary to Chomsky's conception of linguistic competence intended as the possession of a formal competence − stresses the importance of the analysis of the context within which the communicative events take place instead of focusing on the sentence itself. Then, from the end of the 20th century, within the studies on communication in learning contexts, sociolinguistic and sociological approaches have been gradually used in a generalised way. The focus is on the language spoken by students, which is regarded as a key factor underlying marginalisation, exclusion and banishment.

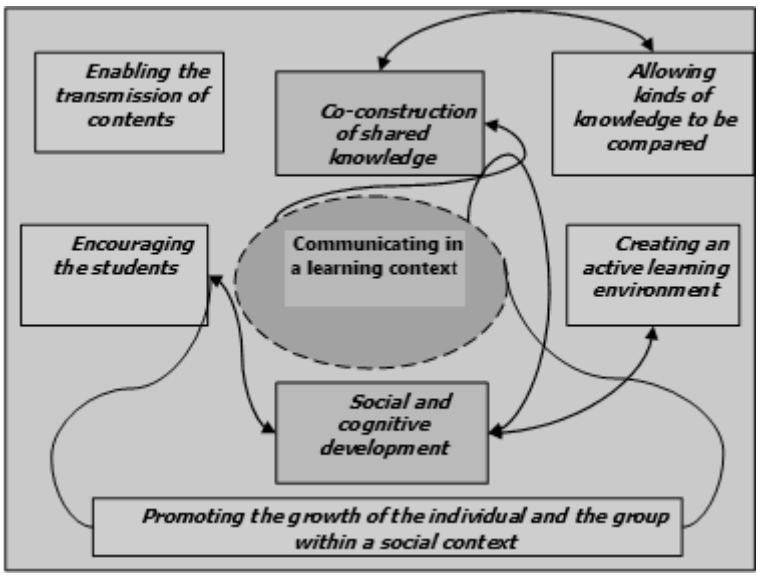

Fig. 12.1. Communication in learning-teaching contexts.

The concept of communicative competence − intended as a relational, social and pragmatic competence − implies evident

pedagogical and didactic aspects: the aim of language education goes well beyond the teaching of language. The purpose of language education is to meet the linguistic requirements of the individual regarded as a speaker. These requirements mainly include expression, communication and socialization, knowledge, intellectual structures (Rigo 2005).

Therefore, the aim of linguistic education is the transversal work on the so-called "linguistic skills", which are not a synonym for knowledge and, consequently, from the teaching/learning (in this order) of the syntactic and grammatical structures of the language. Linguistic skills not only represent the practical side of communicative competence, but also reflect the complexity of the linguistic uses.

12.4. Improving linguistic communication in learning contexts

In learning-teaching situations, linguistic interactions involve different dimensions related to the use of language as well as various factors.

Actually, this is a very broad framework within which, starting from the dimension concerning communicating in learning contexts, two extremely important conceptual areas go hand in hand: the co-construction of shared knowledge and the social and cognitive development of the group, considering the complex effects generated by an effective communication:

- do not take the students' basic knowledge for granted;
- introduce any new information starting from the notions already known or explained, assessing that they have been correctly understood;
- using short sentences and concrete words;
- always explaining the specific terminology of the discipline starting from the most common words;
- ending the speech without adding further elements.

In this regard, reference should be made to Grice's conversational maxims (1967), which state that the communicative interactions can be achieved only through:

1. maxim of quantity: giving as much information as needed (avoiding being too wordy or too sketchy);
2. maxim of relation: being relevant and pertinent to the discussion without useless additions;
3. maxim of manner: being clear and avoiding any ambiguity;
4. maxim of quality: being truthful and avoiding false information or elements not supported by evidence.

Communication involves the use of linguistic skills, which, however, can be applied in different ways and with different qualitative outcomes, thus leading to different degrees of efficacy. Moreover, the use of language skills sometimes yields results different from the expected ones, which means that the communication is not effective and the contents of the communication are formulated in such a way that their transmission from the sender to the receiver, from the speaker/writer to the interlocutor/reader is complex. The reasons for this risk are numerous and may add up. However, in spite of their complexity, they are distinguished as follows:

- specific difficulties, relating to the type of skill mainly used, therefore they refer to writing, reading, speaking or listening as well as to the characteristics of the subject; they are basically connected to the way in which the subject faces the texts both from the production and the reception point of view.
- generalisable difficulties, pertaining to the learning style of the speaker/writer and their encyclopaedic knowledge. Although the spoken and written language conveys information, the information itself does not make much sense. Its meaning derives from its connections, which may vary and give the sentences different meanings more or less relevant to the subject of communication.

This assumption is very important for this study, because it provides concrete didactic indications for the improvement of linguistic communication in educational contexts.

Improving linguistic communication in learning contexts means formulating teaching models and strategies to enhance language skills and improve linguistic understanding. To this end, it is

necessary to consider the close interactions among linguistic production (speaking and writing) and reception (reading and listening) skills. Among them, despite the differences, there is a relationship of mutual interdependence and enhancement.

Designing and implementing a "Didactics of linguistic skills" means designing and creating language education paths. In order for them to be effective, these paths must be transversal and place communication competence and its development at their core, together with the development of the individual's communication needs as a speaker.

Designing linguistic education course means starting from the analysis of the needs as well as from the possible educational and cultural problems of the students, followed by the implementation of different types of educational interventions:

- meeting the scholastic and extra-scholastic needs;
- adopting a complex model of skills;
- analysis of the nature of different skills in relation to the activated cognitive mechanisms;
- analysis of the role played by skills in relation to the student and the part of the learning path;
- identification of the most adequate techniques;
- prediction of the conceptual notions;
- identification of texts able to support cognitive operations;
- choice of the order according to which the topics are submitted;
- encouragement of motivations and interests;
- identification of suitable verification techniques.

Using the approaches, strategies and measures described herein does not mean that students should be regarded as completely or partially deprived of the information required for understanding. More specifically, it means that the teacher should not take for granted the understandability of his/her message and should take into account the so-called diffraction of the receiver. In classrooms, there are no single archetypical students, but rather multiple subjects, each having their own specific needs.

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13. Technologies for active and collaborative learning

Donatella Cesareni, Nadia Sansone

13.1. Technologies and school: in which theoretical framework?

If we look at the history of mankind, we immediately see how technology has changed habits, work, leisure, and in general the possibilities of human life, from the beginning up until now.

From the invention of the wheel to the most sophisticated digital technologies we carry inside our smartphones showing us the way home or allowing us buying a train ticket, technology has helped people improve somehow their life.

The Soviet psychologist Lev Semionovič Vygotskij (1934), already at the beginning of the last century, made us reflect on the fundamental function that the "tools", from the club to the hammer, to the complex machinery, have in changing the environment in which we live. Human beings live in an environment that is transformed by the tools that were produced by previous generations.

In addition, among them we also have inventions that change people's minds. Let's think about how writing affected human mental and cognitive structures.

According to Walter Ong (1982), writing has transformed the human mind more than any other invention. Alphabetic writing makes thought an object, transforming it into text. The text allows thinking to be articulated in a sequence of concepts, arguments and

demonstrations; the same conceptual abstraction is a cognitive process that would be impossible without the support of writing.

But Socrates warned us against the dangers of writing. Though Socrates has never written, his thought is reported to us by Plato: writing would have led to a loss of the mnemonic capacities of the new generations to come, entrusting their knowledge to paper.

Later in history, other technologies have been "criticized". The advent of the calculator has led many to say that we would no longer be able to do calculations by heart. Nowadays digital technologies are accused of bringing our children to a lesser depth of thought. Point is we certainly modify our minds, maybe losing some abilities, but also acquiring others.

Today's researches confirm that our brain is highly plastic, capable of reorganizing its structure following the type of the input it receives and organizing the contents in a different way, leading people to think differently.

Children born after 1995 are defined by Marc Prensky (2001) as digital natives, since they were born in a world heavily modified by technology; if we agree with Bruner (1996), that culture shapes the mind, growing in a culture dominated by technology inevitably brings changes to the way information is processed. By using different media, men come to think differently.

Thus, our youngsters, immersed in a system of interaction and communication with machines since childhood, have undoubtedly developed a different way of thinking, a greater speed of reaction, a capacity for parallel thinking, an expansion of spatial memory and the ability to work on multiple levels (multitasking). But what have they lost? An aspect that for many teachers appears to be compromised is the reflective capacity, the ability to stop, reason and learn from the experience.

Are we then facing a catastrophe?

We are certainly in a period of transition and the school has an enormous responsibility to ensure that this turns to be an advantage for our culture instead of a problem.

Indeed, for Bruner (1996), the school's aim is both to transmit the values of a culture and to train young people to be able to change it, so that the culture does not stagnate, dying in the end.

But this can only happen if students and teachers are able to speak the same language. How is this possible? Let's consider Prensky's concepts of digital cleverness, digital dumbness and digital wisdom (2009).

Today's adolescents show some "digital cleverness" when smartly using their devices, but without fully understanding how to exploit the possibilities offered by the devices themselves and by the web in general. Sometimes they show "digital dumbness" when using technologies to hurt someone (Cyberbullying) or to look for shortcuts and avoiding commitment, as in constructing texts by pasting online materials without even worrying about the validity of the sources.

"Digital wisdom" is instead expressed as the capability to use technologies to enhance one's abilities.

Therefore, teachers set themselves up as digitally wise, when they are able to organize learning contexts in which students can use their digital cleverness to enhance their skills, and teachers guide and monitor the quality of the process. Technologies are part of children and adults' everyday life and must therefore rightfully enter a school that wants to open up to the world, using the typical tools of the social context in which it operates to teach new generations to create and share knowledge.

And to do this it is necessary, as Prensky suggests, that teachers learn to speak the digital natives' language without forgetting their own. It is in this direction that technologies must be introduced at school, that is to promote a real change, by putting students at the center of their learning path. In fact, it is even more important than simply entering schools, to adopt these new tools based on new learning methods.

A solid basic framework in this sense is offered by the socio-constructivist perspective, according to which learning is an active process that takes place essentially within the interaction with others and with the objects belonging to the culture in which we live (Bruner, 1996; Vygotskji, 1934). On one hand, in fact, one learns by participating, collaborating, and discussing (hence, the importance of teamwork, which is a process to fully enter into school strategies). On the other hand, one learns by using tools which mediate the relationship between individuals and objects.

Learning is finally conceived as an active process of knowledge building, linked to doing (Dewey, 1938), and producing artifacts, cognitive or concrete, that are meaningful for students.

To renew teaching and learning process according to this framework, Paavola, Engestrom and Hakkarainen (2010) developed a pedagogical approach, defined as a Trialogical Approach to Learning. This approach integrates "monological" (cognitive) and dialogical (situated cognition) approaches to learning, with a third element: the intentional processes involved in collaboratively producing knowledge artifacts that are shared and useful for the community.

Crucial in this approach is the use of technologies, tools that allow to create and share, process and transform, organize different artefacts, making visible and transforming knowledge practices.

We will see in the third and fourth paragraph how this approach can guide the planning of educational activities in secondary schools and universities. In the following paragraph, we will offer a brief overview of the possible use of technologies in the school, specifically referring to different ages.

13.2. Kindergarten and Primary schools: Kids and computer

How can we use digital technologies with children aged 4 to 10 years?

In the early years of the introduction of computers in schools, Taylor (1980) proposed a distinction in the use of technologies as Tutors, Tutees and Tools.

To act as Tutors were the old CAI type programmes, which were based on the behavioristic approach of Programmed Instruction: preparing an ordered sequence of topics and knowledge and defining assessment tools for each sequence. If you pass the test, these programs offer a positive reinforcement that allows you to continue along the path.

Along with the change of the theoretical framework, moving from behaviorism to cognitivism and constructivism, programmes of this type were criticized, since they considered the student as a simple empty container to be filled with information. The constructivist

approach, instead, considers learners as those who build their knowledge by interacting with information and interpreting it. So, the focus of educational research has shifted towards the other two definitions, that is computer as a Tutee and as a Tool, which have remained valid until today.

Seymour Papert (1980) was the first to state that the student should not be "computer-programmed", instead they should teach the computer (their Tutee), by reflecting their own way of thinking. This is the case of the Logo language, a programming language of extreme simplicity but of great power allowing children to draw geometric figures by imparting simple commands to a "turtle" on the screen. Through the Forward or Backward commands of a certain number of steps, and the Right and Left of a certain number of degrees, children can construct geometric figures on the screen. They can also teach new commands to the turtle, and programme specific sequences to build small animations. According to Papert (1980), Logo is not just a programming language, but a "training ground" for thinking, and learning from one's mistakes.

Coding and educational robotics are nowadays an evolution of the pedagogical ideas of the Logo language. Papert's work, indeed, was continued within the MIT by Mitchel Resnick, who, working with his colleagues from the "Lifelong Kindergarten" research group, created the Scratch programming language, a real computer language specifically designed to be understandable and usable even by children (Resnick, 2013). Scratch grammar is based on a series of colorful programming blocks that children can connect to create more or less complex programmes that can range from simply moving a character to creating stories or video games. In recent years programming or coding activities have been introduced in schools in many European countries, including Italy, according to the actions prescript within the National Digital School Plan. As for the Logo, its creators' basic idea is that programming favors the possibility of reflecting on problem solving strategies and the ability of dividing complex problems into simpler parts; besides, the activity carried out in a playful and collaborative way can also promote trial and error learning and collaboration.

Another important direction is that of educational robotics, which can use either already set up robots (such as the Bee Bot),

programmable even by 4 to 8-years-old children or robot construction kits to be programmed remotely through computers and tablets. Obviously, educational robotics too has been the subject of much research in education. Through a systematic review of the literature, Benitti states that, even if the examined studies often present methodological difficulties, it is possible to affirm that "educational robotics have an enormous potential as a learning tool, including supporting the teaching of subjects that are not closely related to the Robotics field" (Benitti, 2012, p. 988).

But the most important direction emerging from school over the years has been, above all, the use of the computer as a Tool, a flexible tool, allowing to write and publish a text, create archives of stories, build the school newspaper, communicate with students from other schools, perform research on databases or organize data collected in surveys, build multimedia presentations and so on.

Computers can act as important tools to help children exploring the world of writing, through word processing programmes. There are numerous educational values in the use of word processing tools at school, first the possibility of thinking about the structure of the text itself and of revising it many times. Furthermore, since the early years of the introduction of computers in schools, educational research has revealed the potential of technologies to foster collaboration, if used as a support to active teaching. The shared screen, in fact, makes it possible to have tools and work materials available to everyone and each child can intervene with their own contribution.

Moreover, technologies allow us to open up to the world outside the school; through the Internet, forms of network collaboration with other classes can also be implemented.

Technologies can be a support to set up activities in which the class is organized as a community of people who solve problems and build knowledge (Scardamalia and Bereiter, 2006), using educational platforms to discuss together, design common works with students from other schools, connect with experts who can answer to specific questions; they also allow you to open up to diversity through contacts with other languages, cultures, and ages, such as in the case of collaborations between different generations (primary school children and the elderly who exchange and share life experiences;

Kindergarten children who imagine stories that are then illustrated by students of Art schools, and so on).

So, technologies at the service of daily teaching practices, not confined to a "computer lab" use, to visit once a month, but placed in the classroom for daily use, as the movable type box for printing and other technologies of the time were present in classes inspired by Freinet techniques (1969).

In primary and secondary school classes it will therefore be essential to have a technology station equipped with a PC, projector, printer/scanner, and possibly a few tablets for small group activities among students.

Even in kindergarten, "technology areas" equipped with technological tools to be used creatively can be organized. For example, there may be tablets with apps that can stimulate logic and creativity, or small programmable robots like Bee-Bot. But above all, tablets can contain applications to build stories together, recording voice and images, scanning designs and inserting them into history, briefly, becoming tools for the creative production of artifacts.

13.3. The Trialogical Learning Approach to fruitfully integrate technologies in Secondary Schools

In the first paragraph we already claimed that nowadays, among its main tasks, school has that of educating youngsters to a conscious and constructive use of technologies. To this aim teachers should be prepared to set up significant learning contexts, within which the technologies are used to access and build shared knowledge, to solve real problems, and to broaden the dialogic base of the group. The trialogical approach, above mentioned, helps us by conceiving technology as a mediation tool able to sustain the discourse within the community, as a possible extension of the knowledge of the community itself and as a support for the collaborative construction of artifacts. These objects are not merely conceived for evaluation purposes, rather they are meant to be concretely used, both inside and outside the learning community which created them. In this approach, therefore, the acquisition and participation metaphors of learning (Sfard, 1998) are embedded in the knowledge creation metaphor, going beyond two traditional dichotomies: individual

versus social processes, and conceptual knowledge versus the social practices needed to foster collaborative creativity (Paavola, Engestrom, and Hakkarainen, 2010).

The Trialogical Approach is applied through six Design Principles (DPs) (Hakkarainen and Paavola, 2009) which guide the planning of technology-based teaching and learning activities to facilitate the shared efforts of working with knowledge artifacts. In the following table, the DP are presented and accompanied by practical examples taken from European project[1], to which several Italian secondary schools participated to experience the effectiveness of the TLA.

TLA DESIGN PRINCIPLES	DEFINITION	EXAMPLES
DP1 Organizing activities around shared "objects"	*Formative action must converge towards the realization of shared objects recognized as important and intended for actual use*	*A videogame about a famous Italian novel* *A guide for the correct use of a professional oven* *A website about II World War* *A tool to test the acquisition of Math knowledge*
DP2 Supporting interaction between personal and social levels	*It is necessary to fruitfully combine individual work with that of a team, considering individual needs and exploiting inclinations and interests*	*Workgroups of 6-8 members* *Assignation of specific Roles: the group coordinator, the researcher, the process observer* *Formative assessment considering both the individual and the group*

[1] KNORK http://knork.info/website – Promoting *Knowledge work* Practices in Education –is a project funded by the European Community within the Lifelong Learning Program in the years 2014-2016. The project was promoted by the Technology in Education Research Group (TEdu) of the University of Helsinki and was attended by various institutions, schools and universities from four European countries: Finland, Bulgaria, Sweden and Italy.

DP3 Fostering long-term processes of knowledge advancement	*Learners should be provided with enough time for iterative inquiry cycles and with supporting environments to let long-term processes take place*	*Course divided into modules with repeated activities* *Students performing peer-assessment* *Group products to be continuously improved*
DP4 Emphasizing development through various forms of knowledge and practices	*New ideas and practices can easily emerge when learning involves various forms of knowledge and practices: declarative, procedural, visual, as well as tacit*	*Handbook, movies, experts' interviews help build the videogames around the novel* *The guide for the oven was realized both in a textual and multimedia support* *Students wrote a Learning Diary while realizing the II World War Diary*
DP5 Cross fertilization of knowledge practices across communities and institutions	*Creating connections within other contexts promotes the acquisition of novel modes of interaction, ways of thinking and languages typical of contexts with which students interact*	*Videogames experts helping students to project and realize their own product* *Oven producers revising the guide and providing improvement feedback* *Professional software used by students to build their "Math exercises tool"*
DP6 Providing flexible tool mediation	*Learning paths should be supported by adequate and diversified technologies, suited to mediate collaborative activities and able to enhance the aspects highlighted in the other design principles*	*Google Drive to collect storyboard and learning diaries* *Padlet to stimulate a brainstorming about the website graphic* *Geogebra to build the Math tool* *Webforum to stimulate discussion around the main actors of II World War*

Table 13.1. The six design principles and their application in secondary schools.

Together, the six principles synthesise the main pillars of the TLA: designing object-based learning activities through which enhance both individual and collaborative work strategies, creative processes, and an effective use of educational technologies. In this sense, the trialogical approach is not new. However, it provides teachers and researchers with precise guidelines that enable them to innovate their

pedagogical practices and inspire the use of broader and consolidated theoretical frameworks such as Learning by Doing (Dewey, 1900), the Cultural Historical Activity Theory (Engeström, 1987) and the Knowledge Building Theory (Scardamalia & Bereiter, 2006).

Modern digital technologies are well placed within and in support of a trialogical learning thanks to their ability to integrate different types of mediation processes (Rabardel & Bourmaud, 2003). But it is only conceiving them in a theoretically anchored educational design that they can lead young people to use them in a "wise" way, freeing the teacher from the belief that they are an element of distraction to be kept out of the classroom. They should rather be used as work tools, according to a BYOD (Bring Your Own Device) logic, i.e. the possibility of using the devices students already bring with themselves (tablets, smartphones, laptops). With smartphones or tablets, for example, it is possible to participate in collective brainstorming in the classroom, to contribute to a learning discussion, to keep track of the work the workgroups are doing, to build the shared final object. This is the case of the above mentioned examples taken from the secondary schools participating in the KNORK project: personal devices, for instance, were used for the initial brainstorming needed to define the phases and roles of the activity leading to the novel-inspired videogame, as well as to write the learning diary of the workgroups involved in designing the oven guide, and so on.

The BYOD logic focuses on students using their digital devices in classrooms, but technology can also play an important role outside the classroom, at home. In flipped classrooms, students review lecture materials before class, as homework. In-class time is dedicated to discussions, interactive exercises, and independent work that would have previously been completed at home. The materials reviewed before class can take the form of recorded lectures, curated videos, reading assignments, video broadcasts — any material that the teacher dispenses as relevant to the topic at hand. This is how the students building the II World War website prepare some short talk about the world main actors to be presented to their classmates and then stimulate a collective discussion. And this is just the sense of flipped classroom activities, that is to mix face-to-face interaction

with independent study via technology, in which students come to school to do their work armed with questions and at least some background knowledge.

13.4. Technology to renew university teaching

The renewal of university teaching is a complex path, started at European level about fifteen years ago and, however, not yet fully implemented at a practical level in Italian universities. The great issue remains the poor ability to prepare young people for the world of work, providing them with an adequate knowledge base, but also professional skills. One of the main goals of higher education, in fact, is to ensure that students acquire useful skills to achieve success not only in their studies, but also in their future career and in life in general. In every age, the "useful skills" are defined according to the context in which those skills should be mobilized (Le Boterf, 1994). The context where today's students live and work is that of a highly technological impacted knowledge work society. In other words, it is a society where knowledge and technology represent two "inextricably linked" factors in any educational and professional context (Scardamalia, Bransford, Kozma, & Quellmalz, 2012, p. 234). To be successful in such a society, students should learn to act and work intentionally and effectively, individually or together with others, in authentic contexts, solving complex problems and creating new solutions and new knowledge. Based on these aspects, the knowledge work skills that students should master can be grouped into three categories (Ilomäki, Lakkala, & Kosonen, 2013): individual (e.g., metacognitive skills, creativity, and ICT skills), social (e.g., networking and communications) and epistemic (e.g., critical thinking, information management and networking).

In this regard, an important role can be played by digital technologies that, provided a theoretically founded implementation, can enhance students' participation, professionalization process and the teaching strategies that aim to support the sense of community, the creation of knowledge and the production of ideas. What are the appropriate technologies for this? There is no unambiguous indication; the teacher must use the most useful technology (hardware and software) for a specific goal and task. The activities of

a class that adopts, for example, a trialogical approach may require the use of articulated learning platforms (Learning Management System, LMS), where to organize all the activities of the course. One of the most popular LMS is undoubtedly Moodle (Modular Object-Oriented Dynamic Learning Environment), a free and open source educational platform where teachers can "build" their own learning environment by selecting the most useful functions for their own purposes: insert folders to share files; open forum for group discussions; propose tasks and define delivery methods and deadlines; open wiki spaces for collaborative writing; open polls or administer quizzes; manage and share a calendar. Beyond the platforms, there are numerous tools that can support the development of professional skills, such as continuous improvement, creativity and collaboration. From this point of view, the possibility of intervening several times on a text or on an artifact to improve it, being able to post comments and responding to them to clarify certain aspects are functions that make technologies a fundamental tool for the continuous improvement of the objects of knowledge. In this sense, so-called cloud services such as Google Drive (www.google.it) are useful, since they allow students and teachers to organize all types of documents in folders to be shared with defined groups, inside and outside the classroom. The relevant aspect of Google Drive is, in fact, the offer of a series of Apps for collaborative work to directly edit documents online (Google Documents), drawings and maps (Google Drawings), presentations (Google Presentations), facilitating collaborative distance writing, which is furthermore enhanced by discussion tools such as chats. Technologies can also support spontaneous production and exchange of ideas, as well as defining the steps of a project. A certainly interesting tool for this specific action is Padlet (www.padlet.com), a shared bulletin board on which all students can write, even via their own mobile phones. The ideas generated become visible to everyone and easily shared, making the discussion on them more functional and productive. The teacher can organize the comments spatially, moving and grouping them according to the choices of the class.

Here follows an example of university course inspired by the trialogical approach, in which the different technologies above listed were used to promote knowledge work skills, also reporting a good

result, as shown in the study briefly described. One-hundred and nine Psychology students (27 male, 82 females, aged 20-23 years) voluntarily participated in an undergraduate course titled "Experimental Pedagogy", offered at Sapienza University of Rome (Italy). The aim of the course was to provide fundamental knowledge about main learning theories and authors, and to let students experience specific collaborative techniques and an educational use of modern technologies. Students were divided into eleven learning groups with a minimum of nine and a maximum of eleven participants in each. In each module the learning groups had to analyze and discuss issues raised during face-to-face meetings, study the learning material provided by the teachers, reflect upon the various topics, search and share theoretical insights connected to the course content, build collaborative products, and reciprocally comment on them by providing formative feedback. As the architecture of the course was inspired by the Trialogical Approach, each of the six Design Principles inspired specific course activities and, viceversa, each activity followed a specific principle. The general aim of the study shortly reported here, was to understand the impact of the course on students' perceptions of their acquisition of knowledge work skills. The data collection was informed by the trialogical design principles that inspired the course and defined the knowledge work skills to be observed, i.e. collaboration, continuous improvement, digital skills. A self-report anonymous questionnaire was administered at the end of the course, the Contextual Knowledge Practice questionnaire (CKP, Muukkonen et al., 2017), comprising 27 Likert-scale items, organized into seven scales built around TLA design principles. The data collected included 100 CKP-questionnaire responses (91.7% of the 109 participants registered on the course); SPSS was used to perform significance tests (ANOVA). When looking at the scales from top mean score to bottom, we can see that development through feedback is the skill perceived as the most acquired (mean = 4.2), immediately followed by Learning to collaborate on shared objects (mean = 4.2). The last three scales are slightly under the average score of 4 – though, this is still to be considered as highly acquired − with the last one referring to the Interdisciplinary collaboration and communication (mean = 3.5). When considering students' perceptions about their skills

development, it would appear that the Trialogical design effectively promoted the targeted knowledge work skills, notably the capability to use feedback to improve the objects under construction. This skill is connected to the capability to work together in a very concrete way, going beyond the simple group dimension and focusing on object development through the means of a constructive use of modern digital technologies. Altogether considered, these abilities constitute the crucial skill set to promote students' transition towards their professional career.

In conclusion, we claim that, whichever the school level, it is necessary that teachers know how to set up meaningful learning contexts within which students are invited to use the artifacts of our culture, and in particular digital technologies, to access shared knowledge, to build real knowledge and solve real problems, to broaden the dialogic basis of the group and to direct one's effort towards the construction of a product.

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In this volume we have collected the contributions of many colleagues from the teaching board of Double Degree Joint Master's Programme in Pedagogy and Educational Sciences and Training of Sapienza University of Rome and two prestigious universities of the Russian Federation: Moscow Federal University for Psychology and Pedagogy (MSUPE) and North-Caucasus Federal University (NCFU) at Stavropol.

The present anthology is meant to review the positions and studies that individual teachers from the different universities involved presented in recent years, during online courses, in the lecturing, in the meetings and to discuss their possible opportunities.

The volume puts forward this programme, to spread its structure, the theoretical assumptions and the various positions. The contributions are meant to testify a keen interest in internationalization that Sapienza is carrying out. The contributions collected give the reader a chance to share a common interest in the promising approach implied by the Historical-cultural trend in Psychology and Pedagogy of the Vygotsky's thought, which seems a must in psycho-pedagogical reflections, and in organizing and evaluating school activities.

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