The need for "shared challenges": successful training experiences among former school dropouts

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Introduction

Theoretical and Methodological Perspective on Academic Failure

Considering the importance of adolescent experiences in defining future interests and commitments (Nurmi, 1993; Pombeni, 1993), and the significance of schooling both for the time it involves and for its social and cultural significance (Csikszentmihalyi & Scheider, 2000; Bonino & Cattelino, 2002), the quality of education is fundamental in ensuring positive future development. In Italy, the opening of schools to all students (the lower secondary school was introduced in 1963) and more recent initiatives to increase compulsory schooling, have not been sufficient to maintain attendance by adolescents and to guarantee successful completion of their studies (Buzzi, Cavalli & De Lillo, 2002). Roughly 30% of our adolescents withdraw from school before attaining leaving qualifications, and this proportion has remained stable over the last 20 years. A number of studies have sought to define a profile for these adolescents (Aburrà, Gambetta, & Miceli, 1996; Buzzi, Cavalli, & De Lillo, 2002): they are prevalently males, aged 15-17, and are in the initial years of vocational schools. They belong to less privileged social classes, where *privileged* is interpreted in terms of educational achievement rather than family income. To understand this phenomenon, many factors have been considered in the literature (Aburrà, Gambetta, & Miceli, 1996; Buzzi, Cavalli, & De Lillo, 2002): social class, inadequate school performance, lack or loss of motivation, scarce family interest in the children's education, job opportunities. This complex phenomenon is influenced by cultural, historical, demographic and psychological factors. Such different levels of complexity has led researchers to focus on separate aspects, dealing with only limited subsets of factors. Hence, individual research often does not take into account other results and investigations

with opposing interpretations (Smith, Cowie, & Blades, 2000). However, there is a common tendency to examine mainly the *disadvantages* characterizing both these adolescents and the schools they attend.

From the viewpoint of the *students*, lack of success by students is often related to a lack of engagement and interest in study. The main problem seems to be their lack of motivation. Adolescents often feel boredom, apathy (Fallis & Opotow, 2003; Robinson, 1990) and a lack of belonging (Certo, Cauley & Chafin, 2003; Maddox & Prinz, 2003; Osterman, 2000). Such feelings indicate that subjects feel alienated from their schools, and that, on a more personal level, they might not be able to attach a meaning to their experience.

From the *school* perspective, vocational schools are considered synonymous with a low-level learning system (concrete vs. abstract), and, for this reason, they are recommended for students who obtain the lowest grades (Pombeni, 1993). At the same time, some developmental psychologists consider this option a risk *per se* for the students, in that it implies that they are more motivated to become adults and financially independent as soon as possible. This is exemplified in pseudo mature behaviors (drinking and smoking), at the cost of inhibiting greater ambitions (Bonino & Fraczeck, 1996; Largie et al, 2001).

On the one hand , all these approaches lead us to assume that the Italian system of vocational education is not oriented to an intrinsic interest in study. On the other hand, comparative European research studies (OCSE, 2002) show that the Italian vocational system is criticized precisely for being too theoretical and academic (Bottani & Tommei, 2004). Thus there are contradictory opinions for critically defining dropping out and school identity.

Methodological Issues

The dropout rate of the students from these schools can be at least partially related to the institutional difficulty in coordinating the two aspects of learning, vocational and academic, particularly for adolescents. Moreover, most research does not take into consideration what happens to these students *after dropout*. Given this lack it is difficult to ascertain whether the students choosing vocational schools are poorly motivated in learning, or whether the teaching model in such schools embodies a concept of learning not shared by the students themselves. In the 1980s, many studies, mainly concerning child development (Bronfenbrenner, 1979; Cresas, 1978; Tulkin, 1977; Bonica, 1993, 2000a), highlighted that evaluations and school performance of minorities are often the product of self-

fulfilling prophecies (Rist, 1977; Rosenthal & Jacobson, 1968). Nevertheless, with regard to adolescent drop outs, there is little knowledge about the cultural values that might lead to different learning motivations. Moreover, insufficient attention is given to alternative pedagogic models and to the characteristics of the learning environment (Gutierrez & Larson, 1994). From our point of view, this ambiguity can be overcome by more in-depth research on the students' opinions to elicit their motivations, and on didactic models which vary in the way they articulate the relationship between theory and practice, school and work.

A Multilevel Approach

Overcoming the Deficit Model

Our general theoretical model integrates the developmental dynamic systemic approach (Brandstadter & Lerner, 1999; Bronfenbrenner, 1979; Silbereisen, Eyferth, & Rudinger, 1986) and the cultural-historical approach developed within the field of developmental and educational psychology (Bruner, 1986; Gardner, 1991; Rogoff, 2003; Engestrom, Miettinen, & Punamaki, 1999; Cresas, 1991; Perret-Clermont & Brossard, 1988; Pontecorvo, 1999). In this perspective, the alternative to the deficit model is inspired by positive psychology as it places its emphasis on building optimal conditions, rather than dwelling on negative aspects as the product of linear causal connections. Special emphasis is placed on the true quality of the experience as felt and perceived by the individuals themselves, in terms of the *activities*, *roles* and *relationships* exchanged in these contexts (Bronfenbrenner, 1979). To understand this phenomenon, *transformation experiments* or *contrasting contexts* are used. From this viewpoint, an understanding of the school leaving phenomenon could be improved by analyzing the transitions in the *mesosystem* in terms of the careers subsequently followed by dropouts, especially if this transition offers them the opportunity to compare learning models different from those that caused them to dropout.

The level of comparison (mesosystem)

The emphasis on comparing the subjective perceptions of the two experiences shifts the focus of analyses from the behavioral system as enacted in the present

context to the issue of the reflexivity (Bruner, 1990; Bonica, in press). Personal meaning and constructs that emerge from comparison of past and present experiences provide a wider framework that allows the student view both experiences "better". Emotional-cognitive mechanisms (for example, surprise) stimulate the opportunity to make comparisons (Bateson, 1972; Sclavi, 2002; Bonica, 2005); and contrasting situations are meant to encourage subjective reflection on experiences and causal exploration (Weiner, 1986). The derived maps make *mental mesosystems* explicit. This enhances adolescent cognitive resources and allows for greater independence and depth of judgment, in terms of the relationship between motivational expectations, characteristics perceived within the school setting and aspects of academic success (Bonica 2005; Bonica & Sappa, 2003b).

Quality levels of the current experience (microsystem)

In regard to the current experience, the school context can be seen as an interaction between systems of *activities*, *roles* and *relations* that the student experiences by realizing meaning about them (Bronfenbrenner, 1979). The meaning attributed to the experience and the growth of interest for the experience itself depends on how much it is shared with meaningful others and seen as favorable to the fulfillment of the most significant developmental tasks (Havighurst, 1953; Nurmi, 1993; Palmonari, 1993).

Considering *activity*, it is important that the learning activity be *molar* (rather than *molecular*). In other words, we emphasize that it must encourage intrinsic motivation and mastery (Rehinberg, 2002; Harter, 1978), recognition of socially shared meaning (Bruner, 1990; Rogof , 2003) and involvement in optimal challenges (Csikszentmihalyi & Schneider, 2000; Delle Fave & Bassi, 2000). An optimal challenge (Csikszentmihalyi, 1990) requires competence and commitment (Deci & Ryan, 1985; Harter, 1978) and evokes a positive effect in the stress process, as recent studies on coping have shown (Folkman ,& Moskowitz, 2000).

In terms of *relationships* and *roles*, it is fundamental that these experiences are accompanied by socially responsible behavior (Havighurst, 1953) and that they lead to more symmetrical relationships with adults (Arnett, 2001; Bronfenbrenner, 1979).

If we relate this developmental perspective to the debate on the most suitable teaching-learning models, the constructs of *proximal development zones*

(Vygotskij, 1978) and *scaffolding* (Wood, Bruner, & Ross, 1976), become interesting.

Literature has highlighted the abstract and decontextualized characteristics of traditional schooling (Resnick, 1987). *Apprenticeship* has recently been re-evaluated (Lave & Wenger, 1991; Rogof, 1990; Gardner, 1991; Tuomi & Engestrom, 2003; Pontecorvo, Ajello, & Zucchermaglio,1995) and also applied to academic subjects such as mathematics (Collins, Brown, Newmann, 1989) and language (Palincsar & Brown, 1984).

Indeed, *apprenticeship* envisages learning by doing and is accompanied by a growing reciprocity between teachers and students. On the one hand, this reciprocity is based on sharing significant and socially relevant objectives and on highlighting material and mental processes. On the other, it is based on gradually phasing-out support to promote the student's independence.

The Research Project

In September 2000, on the basis of the *multilevel approach* described above, we chose to collaborate with two pilot projects whose pedagogic options derived from the principles outlined above. Students were mostly dropouts from vocational school[1]. This transition between two different learning environments fulfilled our model. During data analysis we differentiated the experiences of the students in the innovative context by calling them Experience 2 (Exp.2), while previous vocational school experiences were denoted as Experience 1 (Exp.1). In previous studies we examined the differences between the two pilot projects considered in Exp.2 (Bonica & Sappa, 2003b), but here we highlight the common aspects of didactic innovation. Students were considered as part of a single sample. As illustrated in Figure 1, the longitudinal approach to the research involved the use of a number of tools, such as interviews, written accounts, observations and questionnaires. The data gathering period took place during significant phases of the courses: initial reception, initial observations in the workshop, evaluation and work experience.

[1] In Italy vocational education can take place within the educational system (3 or 5 years) and the educational training sector established by regional authorities (1-2 years). The pilot projects discussed here belong to the regional sector.

Characteristics of Learning Contexts

Exp.2 were two year vocational courses in metalworking, consisting in a total of 2400 hours (1600 in the workshop and 800 in work experience), occupying 8 hours per day. The pedagogical options can be traced back to recent studies on the construct of *competence* (Ajello, 2002), *cognitive apprenticeship* (Collins, Brown & Newmann, 1989) and *cooperative learning methodology* (Slavin, 1990). On the basis of these premises, vocational apprenticeships were aimed at developing both technical and academic skills. The latter, mostly consisting of English and communication sciences, relational dynamics and problem solving, reinforced reasoning and reflection to promote greater flexibility of thought and action (Resnick, 1987). The teaching methods were based on the apprenticeship model, and teaching staff was drawn from professionals whose technical skills corresponded to the vocational training subjects they taught. Theory teaching sessions in the classroom were alternated with practical demonstrations and practice sessions under teacher supervision. Activities were held in a large simulated workshop, equipped with booths next to the main work stations, allowing for instant alternation between practical demonstration, practice and discussion in small groups. Evaluation procedures also included exchange between students and teachers centered on students' self-evaluation regarding tests. Teaching, particularly when covering both academic and practical subjects, adopted strategies of group cooperative learning. Teaching staff were integrated by psychologists in the role of both teachers and tutors. In addition, teaching staff were expected to fill out a log book daily and hold regular meetings to foster exchange. Work experience was organized with local companies after identifying a number of skilled workers willing to participate as tutors (one tutor per group of 3 to 4 students). Their job was to supervise students whilst maintaining constant contact with their teacher of reference.

The Sample: Socio-Demographic Features and School Careers

The sample consisted of 228 adolescents attending professional training courses in metal working that were organized in two different urban contexts of Turin (Italy). The age of the participants ranged from 15 to 17 (52% were 15, 37% were 16 and 11% were 17). Most participants were male (95.2%) and came from

working class families. Of these, 63% had attended technical or vocational schools, but without completing their qualifications. Overall, 71% had completed junior secondary school with a pass grade and 80% had been held back for one year at least once in their previous school career (83% of these reported that they had failed because they did not like studying).

Research Aims

The aim of this study was to establish whether learning-teaching models that enhance learning by doing (as represented here by Exp.2) favor certain aspects of the *optimal challenge*, and whether they can be considered a means of protection against a disaffection with schooling and a demotivation towards learning.

To this purpose, we wanted to:

1. examine the perceived quality of the current experience (Exp.2) in comparison with the previous one (Exp.1) on the basis of specific criteria defining what is meant by a positive school experience. These criteria were: a) the perception of an optimal challenge, expressed as engagement, concentration and positive stress, b) the meaning attributed to the experience, interpreted as feelings of belonging and sharing the rules, objectives and meanings of the learning process.
2. further examine the role that "putting into practice" occupies in this experience, in terms of the perception of optimal challenges, belonging and shared meaning. In addition, evolution over time was considered.

Finally, the investigation seeked to ascertain how much these aspects can be connected to the desire to learn a job rather than to earn a wage as soon as possible.

The investigation was carried out in two stages:

1. A preliminary qualitative study was conducted through interviews and written accounts describing the qualities of Exp.2, also by comparing them with Exp.1. This part had the objective of establishing the degree of alignment between the perceived experience and the pedagogic aspects that guided the courses.
2. Statistical analyses were performed on items derived from the qualitative analysis and then administered via questionnaire to check whether the objectives indicated above had been fulfilled across the whole sample.

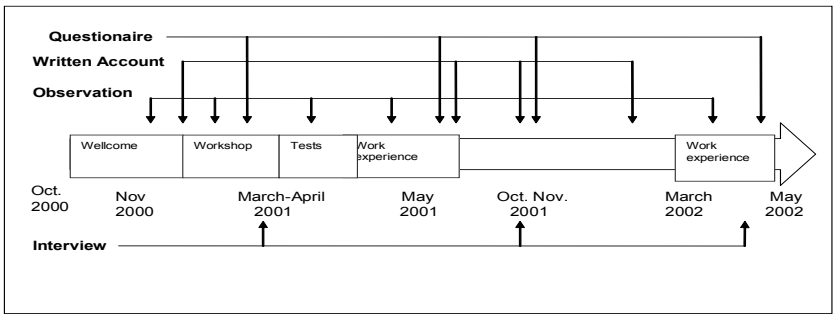
First Stage: Preliminary Study

Methodology

Tools

Interviews and written accounts were collected during Exp.2. Thirty male adolescents were asked to participate in semi-structured interviews conducted over a period of time (see Figure 1).

Figure 1 - Research Design



The participants varied in age and family attitudes towards work. In drafting their written accounts (diaries of surprise), participants were asked through an open question to indicate what surprised them most during Exp.2, and to report any of their successes or failures. Here we considered two different sessions (see Figure 1) when 638 statements were collected from a sub-sample of 128 participants.

Analyses

The content of the text was analyzed by identifying *contrastive structures in the discourse* that would indicate a comparison between contexts and changes in personal constructs (Bonica, 2005). In this study, the texts are only used to exemplify and illustrate the students' perceptions of the themes considered.

Results

Analysis of the surprise diaries and interviews revealed how important it was for students to experience *learning by doing* within a context of a challenge shared with the teachers, rather than as an extemporaneous activity only remotely related to the objectives of the training project. In particular, the students appeared to feel comfortable with the model of cognitive apprenticeship which inspired these innovative projects. The following statements can give an idea of this correspondence in meanings between students and teachers.

Relationships with the Teachers Based on Recognition of a Shared Objective

Commenting on their first day, these students reported a positive surprise. In particular, they claimed to have immediately recognized the shared objective of learning a job.

> "I was really surprised by the warm welcome we received on the first day. It seemed as if they really wanted to get to know us and to help us get ahead in the job we had chosen" .

This statement is interesting because in the first meeting students confront their expectations with the requirements set by the environment, in an attempt to understand how to become a *good student* (Doyle, 1993).

> "In school (Exp.1) you can't make mistakes, you're on your own. You're the one who has to understand and there's no real objective to achieve".

In contrast to Exp.1, which is described as "lacking an objective", in the new context a form of sharing was created, as demonstrated by the readiness and

willingness of teachers to provide the needed help so that "everyone" could reach the milestone of learning the skill.

> "I imagined a "normal" school, but here they really invested in us as student. You can really see that they want that EVERYBODY understand, not just the grade".

In this frame of sharing, which relates to a molar project, even the roll call at the beginning of the school day is perceived as a sign of concern rather than an attempt to control students:

> "In this school you are much more looked after. If one day you don't come, they call home to ask if something happened … Every absence has to be immediately justified. In other schools nobody calls home … they just don't care".

Recognition of an Adult Role: Responsibility and Self Control

The students also appreciated the participation of adult figures who had different roles and felt they were being treated as adults, because they were given the responsibility of participating in a project with "real" constraints and risks.

> "Here we are dealing with many more adults because we are not here on our own, there are managers too so…we have to behave differently, unlike at school (where you have) the teachers and the principal and then the rest are all just students…"
> "I was treated like an adult when they asked me for my trust, appropriate behaviour, dangerous machinery, so (here) you have to have trust and self control"

Participants perceived a successful balance between independence and support in the role and relationship system. On the one hand, this allowed them to express their desire for greater equality with adults. On the other, it provided a shared context the students felt they could 'belong' to. This was also facilitated by the real interest shown by teachers .

Putting theory into Practice: Optimal Challenge and Engagement, Concentration on the Task

Optimal challenge. Within this shared frame, the system of learning activities in which the students were involved was perceived as enhancing a feeling of completeness and proving ones' worth. Learning by doing was perceived as the way through which a relationship was established between seeing, doing, understanding, succeeding.

> "The theory … one reads the book, and that's all. Here, we learn the theory but put it immediately into practice … It is also a test with our selves, since we see our limits … where are we going to and when the job is finished ..and it is right like that … I am satisfied … since I did the work".
>
> "Here, they explain to you first what you have to do and than you have to put it in practice. It never happened that I didn't understand".

The opportunity to practice what one had learnt was perceived as an opportunity to prove self worth, "since we see our limitations" with a final feeling of "satisfaction" as one of the students stated. Moreover "mixing theory and practice together", as expressed by another student**,** appeared to help them to believe **"**that I can do it and I was able to learn". This feeling of satisfaction can be interpreted as an optimal challenge (Csikszentmihalyi, 1990) because it balances challenge with a feeling of competence. This accompanies and evokes those feelings of stress and satisfaction highlighted by coping theorists (Folkman & Moskowitz, 2000).

Engagement and concentration in facing tasks. Responsibility and engagement were perceived by the students as being required by the context that brought them closer to an adult role. They emerged from the learning process through the acquisition of the ability to persevere, associated with the self-control needed to take time to concentrate on the task, instead of "setting your hands to it straight away".

> "In our previous school, when I made a mistake I gave up immediately...since attending this school I realized that I have to use my head more instead of setting my hands to the task straight away. Now they have taught me how to think".

Engagement and perseverance recall the significant motivational aspects in terms of determination (Harter, 1978) and reinforce a sense of involvement in a optimal challenge (Csikszentmihalyi, 1990). These feelings were also reinforced

over time and encouraged the students to commit themselves to increasingly complex tasks.

> "In the final report of the work experience I explained the entire sequence of work operations from the arrival of raw material to the finished product. I asked the tutor to give me a manual of the firm, I brought it home and wrote the report. … I worked for a good month every evening at home and wrote about 30 pages. I normally work hard only occasionally and this time I think I did a good job, in fact even the teacher was satisfied with it".

Motivation to Learn. The perception of the experience according to the terms outlined above appeared to influence the desire to learn, which is expressed in the following statements as a feeling of well-being and real (spontaneous) interest , in contrasts with the feeling of oppression (pain) that characterized the previous school experience.

> "Last year it was very painful to get up every morning and to go to school, here it is the contrary, it's very pleasant and I come spontaneously and willing to learn".
>
> "I wanted to go back to school after the summer, I felt like using my time to learn, I was sick of not doing anything. This didn't happen to me before, in junior high school I didn't feel like going back to school because I knew that it meant opening a book and this was a shock".

Through the qualitative data outlined above, we highlighted how the students noted the differences between their school experiences, recognizing that Exp.2 was a teaching model that placed practical learning in a framework of meanings where both teachers and students shared commitment and challenges. This sharing of meanings in terms of the activities done was accompanied by a recognition that *putting into practice* is an opportunity to prove oneself by engaging in optimal challenges where one must act and persevere with dedication and concentration. The data therefore allowed us to structure a number of items to establish whether these results could be extended to the whole sample considered. In particular, we concentrated on the role played by *putting what you have learnt into practice* in terms of the perception of an optimal challenge (sensation of positive stress, commitment and concentration) and the perception of sharing meanings.

Second Stage

Methodology

Tools

The questionnaire (Bonica, 2001) used to gather the data presented here covered 400 variables, which comprised aspects regarding: a) personal background (family, associations, area, peers); b) perceived environment (e.g.: opinions regarding school, work, support by the family, timing), experiences and comparison between different learning contexts; c) self-image (e.g.: motivation, self-efficacy, educational choices, aspirations). The questionnaire was self administered in the classroom at set intervals during Exp. 2 (see Figure 1). We will focus on the first two research sessions (T1= 3 months from the start of the courses; T2=between the first and second year).

The perceived quality of experience

From the qualitative analyses we defined 5 items regarding the perceived experience. The students were asked to report how often they:

1. put what they learned into immediate practice (*put into practice*)
2. felt worried and careful not to miss information (*engagement and concentration*)
3. felt stressed but satisfied (*positive stress*)
4. asked themselves if it really made sense to be there (*lack of sense*)
5. felt oppressed by the thought of having to attend. (*oppression*).

The answers were reported on a scale ranging from 1 to 4: 1=*never*; 2=*sometimes*; 3=*often*; 4=*always*.

Vocational motivational orientation

We asked the participants to indicate how much they agreed with the following statements: a) "It's important to learn a job well"; b) "It's important to earn money as soon as possible". The responses were classified according to a scale ranging from 1 to 5: 1=*totally disagree*; 2=*substantially disagree*; 3=*don't disagree or agree*; 4=*substantially agree*; 5=*completely agree*. A new variable was then added which corresponded to the difference between the two item scores. Its values ranged from – 4 (total interest in earning money as soon as possible) to + 4 (total interest in learning a job well).

Analyses

The quality of the experience referred to Exp.1, Exp.2 and their comparison was ascertained by comparing averages (Paired-Sample *t*-test) and Bivariate Non Parametric Correlations. To establish duration of these effects over time, Linear Regression analysis was adopted.

Results

The results given in Table 1, 2, 3 and 4 confirmed a qualitatively good impression for Exp.2 compared to Exp.1 over the whole sample. In Exp.2, in particular, *putting into practice* took on a positive connotation with respect to the optimal challenge, to the feeling of belonging, and to a motivation to learn a job instead of earning immediately.

Table 1 shows the perceived quality of Exp.1 and Exp.2. In the Exp.2 the students frequently put into practice what they had learned, felt positive stress, and engaged and concentrated on the task. These feelings were rarely associated with Exp.1. In addition, in Exp.2 they only rarely asked themselves why they were there or felt a sense of oppression. Instead these feelings were more frequent in Exp.1. For all the variables, differences were statistically significant.

Table 1 - Perceived quality of Experience in Exp.1 and Exp. 2 – Mean differences

	Exp.1		Exp.2			
Quality of Experience	**M**	**SD**	**M**	**SD**	t^a	p^b
1. Put into practice	2.32	. 87	3.19	.85	9.26	<.001

2. Engagement and concentration	1.92	.81	2.49	.86	6,93	<.001
3. Positive stress	2.28	.90	2.65	.86	4,4	<.001
4. Lack of sense	2.64	1.05	1.79	.96	8,55	<.001
5. Oppression	2.66	.99	2.01	.94	7,19	<.001

Notes: Range 1 (never) to 4 (always)
Data collected 3 months after the beginning of Exp.2 (N=177)
[a] Paired-Sample *t-test* coefficient
[b] Two-tailed Significance test

By analyzing the correlations between the different variables, we detected some differences between Exp.1 and Exp.2 (Table 2 and Table 3).

Table 2 - Exp. 1: Correlation Matrix of the variables about the perceived quality of experience

Quality of experience	1. Put into practice	2. Engagement, concentration	3. Positive stress	4. Lack of sense	5 Oppression
1	-	.263**	.129	- .096	.013
2		-	.403**	-.161*	-.124
3			-	-.118	-.025
4				-	.331**
5					-

Notes: Data collected 3 months after the beginning of Exp.2 (N=177)
Non Parametric bivariate correlation. Spearman's rho correlation coefficient.
Two-tailed Significance Test * p< .05 ** p< .05 *** p< .001

In Exp.2, putting immediately into practice what one has learnt correlated with positive stress, engagement and dedication to the task. In Exp.1, putting into practice emerged more rarely, and though concentration was enhanced, it did not appear to convey optimal challenge as positive stress. In addition, in Exp.1 putting into practice did not correlate with students asking themselves why they were there or with feelings of oppression. In Exp.2 these variables correlate with each other: put into practice seems to protect these students from feelings of lack of sense and oppression.

Table 3 - Exp. 2: Correlation Matrix of the variables about the perceived quality of experience

Quality of experience	1. Put into practice	2. Engagement, concentration	3. Positive stress	4. Lack of sense	5 Oppression
1	-	.369**	.156*	- .199**	- .212**
2		-	.135	-.248*	-.180**
3			-	-.142	-.106
4				-	.444**
5					-

Notes: Data collected 3 months after the beginning of Exp.2 (N=177)
Non Parametric bivariate correlation. Spearman's rho correlation coefficient.
Two-tailed Significance Test * p< .05 ** p< .05 *** p< .001

Table 4 shows the impact of putting into practice over time. The values obtained highlight an impact both on the feeling of belonging and the motivation to learn a job instead of earning a wage as soon as possible. The difference between the two motivational orientations favors the intrinsic dynamic towards learning, highlighting how this form of learning does not contrast with the desire to learn, but tends to reinforce it instead.

Table 4 - Linear regression. Effect of learning by doing on the perceived quality of Exp.2 and vocational motivational orientation.

	Lack of sense Exp.2 - T2 [b]		**Oppression Exp.2 - T2 [b]**		**Motivation to learn a job vs. to earning soon - T2 (b)**	
	β	t	β	t	β	t

Put into practice						
Exp.2 - T1 [a]	-.267***	-3.74	-.291***	-3.53	.214**	2.69

Notes: * p< .05 ** p< .05 *** p< .001
[a] Data collected three months after the beginning of Exp.2 (N=177)
[b] Data collected at the end of the first year of the course and the beginning of the second

Discussion

The above results suggest that Experience 2 was not only perceived as more positive than previous schooling for all the variables considered, but also that *learning by doing* played a more important role. Indeed, it is interesting to note that although both experiences (Exp.1 and Exp.2) involved vocational institutions, only in the current experience (Exp.2) *learning by doing* appeared to convey both engagement and concentration in coping with the task and a balance between challenges and skills. [2]

These results therefore contrast with research that views vocational system as being less adequate in terms of offering these opportunities (Bonino & Fraczeck, 1996, Largie et al, 2001)

These results suggest that the students themselves realized they needed to overcome binary distinctions between theory and practice. Students affirmed that, at most, theory allows one "to get an idea", but not to really understand, stressing the importance of relating theory to practice and to adult responsibility. These findings confirm research highlighting substantial discontinuities between vocational and academic learning (Resnick, 1987; Bottani & Tommei, 2004), and are consistent with the so-called Life Skills (WHO, 1996), defined by the World Health Organization, to encourage schools to assist adolescents in their transition to adulthood. A greater equality with adults is considered an important factor by Arnett (2001) and by developmental task theoreticians (Havighurst, 1953), as well.

[2] It should be stressed that the success of experience 2 is confirmed also through objective data: 90% of the sample completed the course with a 10% absenteeism rate (a maximum of 30% was allowed) and an average final mark of 70/100. In motivational terms, we observed, in other analysis of the data, a significant difference in favor of the opinion that it is important *to learn* a job, instead of to *earn money* as soon as possible. This difference remained the same until the end of the course with 68% of the sample expressing the intention to continue their studies further (Bonica & Sappa, 2003a, 2003b, 2003c).

The data also confirm the fundamental role played by pedagogic orientations of schools in fostering a positive relationship with learning.

It should also be noted that even when the students felt engaged and concentrated in Exp.1, this did not influence, except marginally, the recognition of meaning and it co-existed with feelings of oppression at the thought of being compelled to attend.

We believe it is worthwhile to suggest a further reading of the data relating the experience to the global pedagogic model adopted by the two pilot centers (Exp.2). As emerged from the interviews, it is likely that the subjects perceived a wider sense of sharing and understanding which developed through a coherence of purposes enhanced during the learning process which involved classroom, workshop, work experience. These activities synergically interacted with other aspects, for example, personal relationships and roles associated with the perception of greater reciprocity with adults. The discriminating element in this perspective is that learning by doing confers meaning to the experience, especially if it interacts with a wider system of shared objectives and meanings. Learning by doing turned out to be an experience, not only for its intrinsic qualities, but also because it provided a pathway for students to connect with the working world and adulthood.

The context conferred these qualities on the activities and this was perceived by the students themselves. The significant adults (teachers) valued what the students were learning both because it presented them with tough challenges, and because they were confident that the students were capable of meeting them. In their narratives, these boys often evoked the perception of having been welcomed and involved in a meaningful project which entailed limits and responsibilities and anticipated their entrance into adulthood. These values were perceived as being effectively shared by teachers. At the same time, their stupor (surprise) indicated a spontaneous recalling of negative school experiences: teachers only interested in evaluating performance, feelings of loneliness, fear of comparison with fellow students, lack of visible goals. Hence, on the one hand learning by doing acquired a clear meaning within the school program, on the other it produced a feeling of mastery and competence that could be applied outside the school context. In the following example, this virtuous circle emerged in the form of gratitude and pride, because it enabled more equal roles to be established within the family (Bonica & Sappa, 2003a).

> "In the family we were sitting at the table and discussing PLC [Programmable Logic Controller, a microprocessor-based industrial control system] and I started to explain to my mother father and brother...the lecture took half an hour … I felt a little prouder and happier to attend this school because it gave me another chance at home too".

In addition, the level of the challenge was recognized as being *high* in adult and socially sanctioned terms. It was not perceived as being *substandard* and designed for *lazy* students *who had no desire to learn*.

Other research undertaken in upper secondary schools (Certo, Cauley, & Chafin, 2003; Mark, 2000) has recognized how *realistic* programs which implicate a shared cognitive challenge with teachers and a connection with the world outside the classroom, increase motivation and feelings of belonging. Here the presence of a third external interlocutor seems to be relevant. Success for the student meant acquiring skills that were recognized in the workplace and in terms of which the teachers also were happy to be judged. The third interlocutor established a real reciprocity between students and teachers, which in the envisaged experience (Exp.2) could be reinforced by frequent return to the classroom for reflection, discussion and improved learning. The boys showed the need to share a challenge. This implies the involvement in a meaningful project which requires on the one hand attention and personal commitment (challenge dimension) and, on the other, the feeling that one can count upon teachers, who are willing to work hard since they share the same objectives (sharing dimension).

Conclusion

The goal of this study was to establish whether models of learning-teaching which enhance learning by doing, as represented here by Exp.2, favor certain aspects of the optimal challenge and can be considered as protective against disaffection with schooling and demotivation towards learning. The opportunity to study an innovative context which exhibited the pedagogic characteristics described above allowed us to elicit the willingness of these adolescent drop outs to be successfully involved in further learning processes. Being involved in practical and vocational training proved to be compatible with an interest in investing time and energy in a process that included a passion for reading and writing. This can be evinced from the effort dedicated to the non-compulsory report that 70% of the students drafted at the end of their work experience. The fact that the majority of

the sample intended to continuing study at the end of the course appears to reinforce this observation.

Methodologically, we have highlighted the productiveness of research models that examine the innovative situations offered by society. This position derives from the historical-cultural and ecological perspective outlined by Bronfenbrenner, informing our previous research (Bonica, 1993; 2000a; Bonica & Mouvet, 1997), and exploiting the potentialities that Bronfenbrenner recognized as being specific to an already established *transformation experiment*. The advantage provided by these situations consists prevalently in the opportunity to manipulate variables and beliefs, which may be theoretically significant but difficult to control experimentally. In our case the didactic methods adopted, inspired by the principle of learning by doing, were fundamental aspects in freeing students from the school-work dichotomy by making a distinction between the motivation to learn a job and a predisposition to earn money as soon as possible. A further methodological decision which informed our work was to consider the mesosystem. This allowed us to focus our attention on the ongoing transition between the two different learning experiences and to highlight the perceptions of the students through comparison. This choice was also modeled on previous research on the school leaving phenomenon (Bonica, 2005) and emigration (Bonica, 2000b; Sappa, 2005) and its productiveness was confirmed once again. Indeed, if we assume that an individual's self-definition occurs through the interaction with the definitions supplied by the context (Bosma & Kunnen, 2001; Heinz, 2002; Oosterwegel, 2001; Silbereisen, Eyfrth, & Rudinger, 1986), the opportunity for an adolescent to explore and make comparisons with alternative contexts can endow him/her with *empirical information* enabling a *more objective* stance. To remain exclusively within the same context can lead researchers to a methodological ambiguity and does not allow new possibilities to emerge for the students themselves. This could explain the substantial convergence of research towards assessing *weakness factors* in this population rather than *positive potentialities.* Further research could deepen the analysis of the relationship between motivational orientations and family cultural background (Bonica, in press) and enlarge the scope of the inquiry to a further set of variables - not considered here - such as gender, peer group and other non-vocational school curricula.

References

Aburrà, L., Gambetta, D., & Miceli, R. (1996), *Le scelte scolastiche individuali* [Individual school choices], Rosenberg & Sellier, Torino.

Ajello A.M. (2002), *La competenza* [Competence], Il Mulino, Bologna.

Arnett, J.J. (2001), Conceptions of the transition to adulthood: perspectives from adolescence through midlife, *Journal of adult development, 8 (2),* 133-143.

Bateson, G. (1972), *Steps to an ecology of mind*, Balantine, NewYork.

Bonica, L.(1993), "Negotiations among children and pretend play", in Stambak M. & Sinclaire H. (Eds) *Pretend play among 3-years olds*. (pp. 55-117), Lawrence Erlbaum, Hillsdale, New Jersey.

Bonica, L., (2000a), L'ecolé maternelle en Italie: le partenariat avec l'Universitè et les services territoriaux. [Nursery school in Italy : the partnership with University and territorial services], in S. Rayna, S. Bruyere (Eds), *Traditions et innovations dans l'education prescolaire : perspectives internationales* (pp. 220-252), Harmattan, Paris.

Bonica, L. (2000b), *Migranti e reciprocità* [Migrants and reciprocity], Casa di Carità Arti e Mestieri Arca Studio, Torino. Availabe: www.carmes.it/progetti/iter.htlm.

Bonica, L. (2001), *Io e la transizione scuola-formazione-lavoro.* [I and the School-vocational training-work transition] Questionnaire, Laboratory of Developmental Psychology, Department of Psychology, University of Turin, Italy.

Bonica, L. (2005), "«Credevo che…» Significati dell'incoraggiamento nei discorsi di adolescenti in transizione tra la scuola e la formazione professionale" [«I believed that…» The meanings of encouraging in discourses of adolescents during transition from school to vocational training], in C. Pontecorvo (Ed.), *Discorso e Apprendimento* (pp. 214-221), Carocci, Roma,.

Bonica, L. (in press), "Transizioni biografiche e costruzione dell'identità in adolescenti di origine operaia. Ipotesi per un modello di analisi" [Biographical transitions and identity construction of working class adolescents], in Bonica L., Cardano M., Colombo L., Olagnero M., Pannofino N., Piccardo C., Sappa V. e Sormano A**.,** *Transizioni biografiche. Materiali di lavoro* [On line serial], Department of Social Science, Turin.

Bonica, L. & Mouvet, B. (1997), "Une formation d`encadrantes a` la gestion des innovation socio-scolaires. Lignes de force theoriques et methodologiques" [Training of responsibles for socio-educational innovation. Theoretical and methodological guiding lines], in B. Mouvet & L. Barbosa (Eds.) *Former pour transformer,* CEE Report 36031-CP-2-96-1-BE-Comenius-C31.

Bonica, L. & Sappa, V. (2003a), "Differenziazione dei percorsi scolastici in adolescenza: "drop out" o ragazzi che vogliono imparare bene un mestiere?" [School ways differentiation in adolescence: "drop out" or youths who want to learn a job?], in C. Usai & M. Zanobini (Eds), *Psicologia del ciclo di vita*, Testo in ricordo di Maria Teresa Bozzo (pp.263-278), F.Angeli, Milano.

Bonica, L. & Sappa, V. (2003b, June), Cultura e contesti di apprendimento: un confronto tra percezioni e vissuti nella scuola e nella formazione professionale [Culture and learning contexts: a comparison between school and vocational training perceptions], Paper presented at the Conference *Cultura, Contesti e intervento*, Lecce, Italy.

Bonica, L. & Sappa, V. (2003c, August), Early work orientation: risk's or protection's factors? In S. Bonino & E.A.W. den Exter Blokland (Chair), *The contribution of family and school experience to the adjustment of adolescents and young adults*, Symposium conducted at the *XIth European Conference on Developmental Psychology*, Milano, Italy.

Bonino, S. & Cattelino, E. (2002), La scuola e il benessere degli adolescenti. [School and adolescents wellbeing], in G. Di Stefano & R. Vianello (Eds), *Psicologia dello sviluppo e problemi educativi* (pp.324-353), Giunti, Firenze.

Bonino, S. & Fraczek, A. (1996), Adolescenti e salute [Adolescents and Healt], *Psicologia contemporanea, 137*, 50-57.

Bosma, H.A. & Kunnen, E.S. (2001), Determinants and mechanisms in ego identity development: a review and synthesis, *Developmental Review, 21*, 39-66.

Bottani, N. & Tomei, A. (2004, March), *Specchio delle mie brame com'è la transizione dalla scuola al lavoro in Italia?* [How it is the school to work transition in Italy?], Paper presented at *ADI international meeting: i percorsi della scuola secondaria, il dilemma dell'istruzione tecnica e professionale*, Bologna, Italy.

Brandstadter, J. & Lerner, R.M. (Eds) (1999), *Action and self development. Theory and research through the life-span,* Sage, Thousand Oaks.

Bronfenbrenner, U. (1979), *The Ecology of human development. Experiments by nature and design,* Harvard University Press, Cambridge Mass.

Bruner, J. (1986), *Actual Minds, possible word,*: Harvard University Press, Cambridge Mass.

Bruner, J. (1990), *Acts of meaning.* Cambridge: Harvard University Press.

Buzzi, C., Cavalli, A., & De Lillo, A. (2002), *Giovani del nuovo secolo. Quinto rapporto Iard* [Youths of the new century], Il Mulino, Bologna.

Certo, L.J., Cauley, K.M., Chafin, C. (2003), Students' perspectives on their high school experience, *Adolescence*, 38 (152), 705-724.

Collins, A., Brown, J.S., & Newmann, S.E. (1989), Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics, in L.B. Resnick (Ed.), *Knowing, learning, and instruction.* Essays in Honor of R.Glaser (pp. 453-494), Erlbaum, Hillsdale NJ.

Cresas (1978), *Le handicap socio-culturel en question* [The socio-cultural handicap beyond question], Les editions ESF, Paris.

Cresas (1991), *Naissance d'une pédagogie interactive* [Birth of an interactive pedagogy], Les editions ESF, Paris.

Csikszentmihalyi, M. (1990), *Flow,* Harper and Row, New York.

Csikszentmihalyi, M. & Schneider, B. (2000), *Becoming adult: how teenagers prepare for the world of work,* Basic Books, New York.

Deci, E. L. & Ryan, R. M. (1985), *Intrinsic motivation and self-determination in human behavior*, Plenum Publishing Co., New York.

Delle Fave A., Bassi M. (2000), The quality of experience in adolescents daily lives: developmental perspectives, *Genetic, Social and General Psychology Monigraphs, 126(3),* 347-367.

Doyle, E. (1993) *Paddy Carke ah ah ah*! London: Secker and Warburg.

Engestrom, Y., Miettinen, R., & Punamaki, R.L. (1999), *Perspectives on activity theory,* Cambridge University Press, Cambridge.

Fallis, R.K. & Opotow, S. (2003), Are students failing school or are school failing students? Class Cutting in High School, *Journal of social Issues, 1,* 103-119.

Folkman, S. & Moskowitz, J.T. (2000), Positive affect and the other side of coping, *American Psychologist, 55 (6),* 647-654.

Gardner, H. (1991), *The unschooled mind. How children think and how school teach*, London: Fontana Press.

Gutierrez, K. & Larson, J. (1994), Language borders. Recitation a hegemonic discourse, *International Journal of Educational Reform*, *3,* 22-36.

Harter, S. (1978), Effectance motivation reconsidered: toward a developmental model, *Human Development, 21,* 34-64.

Havighurst, RJ (1953), *Human development and education,* Mc Kay, New York.

Heinz ,W. (2002), Self-socialisation and post-traditional society, *Advances in life course research*, *7,* 41-64.

Largie, S., Tiffany, F., Hernandez-Reif, M., Sanders, C., & Diego, M. (2001), Employment during adolescence is associated with depression, inferior relationship, lower grades and smoking, *Adolescence*, *36, 146*, 395-401.

Lave, J., Wenger, E., (1991), *Situated learning: legitimate peripheral participation,* Cambridge University Press, Cambridge.

Maddox, S.J. & Prinz, R.J. (2003), School bonding in children and adolescents: conceptualization, assessment, and associated variables, *Clinical child and family psychology review, 6 (1),* 31-49.

Mark, H. (2000), Student engagement in instructional activity: Patterns in the elementary, middle, and high school years, *American Educational research Journal*, *37(1),*153-184.

Nurmi, J.E. (1993), Adolescent development in an age-graded context: the role of personal beliefs, goals, and strategies in the tackling of developmental tasks and standards, *International journal of behavioural development, 12(2),* 169-189.

OCSE (2002), *Analyse des politiques d'education* [Analysis of educational policies], OCSE, Paris.

Oosterwegel, A. (2001), "Commentary: the self concept is dead, long live…which construct or process? Differentiation and organization of self –related theories", In A.H Bosma. & E.S. Kunnen (Eds), *Identity and emotion. Development through self-organization* (pp. 33-38), Cambridge University Press, Cambridge.

Osterman, K.F. (2000), Students` need for belonging in the school community, *Review of Educational Research, 70(3),* 323-367.

Palincsar, A. S. & Brown, A. L. (1984), Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities, *Cognition and Instruction, 1,* 117-175.

Palmonari A. (Ed) (1993), *Psicologia dell'adolescenza* [Psychology of Adolescence], Il Mulino, Bologna.

Perret-Clermont A.N. & Brossard A. (1988), "L'intrication de processus cognitifs et sociaux dans les interactions" [The Interplay of cognitive and social processes in the interactions], in R. Hinde, A.-N. Perret-Clermont & J. Stevenson-Hinde (Eds), *Relations interpersonnelles et developpement des savoirs* (pp. 441-465), Delval, Berne.

Pombeni, M.L. (1993), L'adolescente e la scuola. [The adolescent at school], inA. Palmonari (Ed), *Psicologia dell'adolescenza* (pp. 271-291), Il Mulino, Bologna.

Pontecorvo, C. (1999) (Ed), *Manuale di Psicologia dell'educazione* [Handbook of Educational Psychology], Il Mulino, Bologna.

Pontecorvo, C., Ajello, A.M., & Zucchermaglio, C. (Eds) (1995), *I contesti sociali dell`apprendimento* [Social contexts of learning], LED, Milano.

Resnick, L. B. (1987), Learning in school and out, *Educational Researcher, 16 (9),* 13-20.

Rheinberg F. (2002), *Motivation,* Kohlhammer, Stuttgart.

Rist, R.C.(1977), "On understanding the process of schooling: The contribution of labelling theory", in J. Karabel J. & A.H. Halsey (Eds.) *Power and ideology in education* (pp. 292-305), Oxford University Press, New York.

Robinson ,W.P. (1990), Academic achievement and self-esteem in secondary school: muddles, myths and reality, *Education research and perspectives*, 2, 3-21.
Rogoff, B. (1990), *Apprenticeship in thinking,* Oxford University Press, New York.
Rogoff, B. (2003), *The cultural nature of human development,* Oxford University Press, New York.
Rosenthal, R. & Jacobson, L. (1968), *Pygmalion in the classroom. Teacher expectations and pupils' intellectual development*, Holt, Rinehart & Winston, New York.
Sappa, V. (2005), "Inserimento di ragazzi immigrati e comunità discorsive nei contesti di apprendimento a scuola" [Integration of immigrant adolescents and discorsive community in the school learning contexts], in C. Pontecorvo *Apprendimento e discorso* (pp. 221-227), Carocci, Roma.
Sclavi, M. (2002), *A lady goes to the Bronx*, Anabasi, Milan.
Silbereisen, R.K., Eyferth ,K., & Rudinger, G. (1986) *Development as action in context: problem behavior and normal youth development*, Springer, Berlin.
Slavin R.E. (1990), *Cooperative Learning. Theory, Research and Practice,* Allyn & Bacon, London.
Smith, P.K., Cowie, J., & Blades, M. (1998), *Understanding children's development,* Blackwell Publishers Ltd., London.
Tuomi G. & Engestrom Y. (Eds) (2003), *Between school and work: new perspective on transfer and boundary-crossing,* Pergamon, Amsterdam.
Tulkin, S.R. (1977), "Social class differences in maternal infant behavior", in P.H. Leiderman, A. Rosenfeld & S.R.Tulkin (Eds), *Culture and infancy* (pp.495-537), Academic Press, New York.
Vygotskij, L.S. (1978), *Mind and Society*. Cambridge, MA: Harvard University Press.
Weiner, B.(1986), An attributional theory of motivation and emotion, Springer-Verlag, New York.
Wood, D.J., Bruner, J.S., & Ross, G. (1976), The role of tutoring in problem-solving, *Journal of child psychology and* psychiatry,17, 89-100.
World Health Organisation (1996), *Life skills education,* Mimeo, Geneva.