

## Educate for the Development of a Sustainable Future

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### Abstract

*This work addresses the issue of education-training in consideration of the strong economic-value crisis and the new reference paradigms that denote a striking contrast between an exponential technical-scientific growth and a decadent humanistic-civil model. Through a survey that sets goals on which to reflect, in relation to the Europe 2030 strategy and the UNESCO objectives, indicated to improve people's lives and achieve sustainable development, we intend to explore the value of certain issues within the research project and the following theoretical principles are studied:*

- the thought resulting from experience.*
- complexity as an approach for a unified vision of knowledge.*
- the need to adopt innovative methods and organizations in teaching practice.*
- development of significant learning and Key-Life-Skills.*

*From a practical point of view, a research activity is carried out with an interdisciplinary key to study the theme of orientation and disciplinary preferences of young students attending secondary school II (Avellino) and subsequently those of the University (Salerno).*

*Currently there is a wide-ranging heated debate on which skills need to be enhanced in students, citizens of the 21st century, because education represents a fundamental role for the growth of society, for the protection of human rights and our planet. Observation of the territory, collaboration between intelligence, interculturality, innovation, inclusion, interconnection, and complexity seem to be key points to be understood as opportunities which, by meeting and crossing transversal themes, favour insights and acquisition of indispensable skills*

**Keywords:** Education, orientation, skills, development, interdisciplinarity, sustainability, research

## **INTRODUCTION: Description of the research phase**

Sociological research is generally configured as an investigation procedure aimed at observing, describing, explaining, and rationalizing a particular aspect of society.

This aspect, seen as a problem, assumes the characteristics and requirements of problem solving, multidisciplinary, participation and notation of social phenomena. (Palumbo M., Garbarino E. 2006)

In order to the investigation carried out develops to different research methods and phases ranging from the definition of the problem, to the theoretical perspective and to the formulation of hypotheses.

Then we proceed with data collection, coding, and analysis; the final interpretation of the results; the drafting of the written report and the eventual publication of the entire work. Therefore, the following stages have been identified and implemented in the experience presented:

- **Preparatory stage:** First of all, we analysis the problem, the theoretical perspective of reference and questions and hypotheses were formulated. Collective conversations and balance sheets of the significant elements that emerged were preferred. The participants identified some questions and shared a questionnaire to which they replied through a Google form. The questionnaire was sent to the students of the Liceo Statale -Publio Virgilio Marone di Avellino.
- **Operational stage:** in this level data collection and related tabulation is performed. The formulation of the research design followed, the testing of the hypotheses with a graphic representation of the answers and the elaboration of statistics.
- **Hermeneutic-Evaluation stage:** At this time, the examinations of the dates acquired and collected were processed with consequent interpretation of the results. Finally, the validation process (or refutation of the starting hypothesis) was advanced.
- **Communicative stage:** in the end stage, the awareness of the effects that research has had on all the participants involved, both the choice of behaviours adopted consistent with the results of the research. To make the result of the research visible and usable, the activities will be based on elaboration of reports, posters, ppt and drawings, summary pictures, debates, and round tables.

In the preparatory stage, the questions that emerged and were used to formulate the questionnaire administered, arose from a satisfaction survey carried out among the participants who had previously been motivated by some open discussions on the following controversies:

- Is there a discontinuity between the different school degrees? Why?
- What relationship should there be between school grades? What difficulties do students experience in moving from one school to another?
- Generally, how are the individual disciplines taught and how do teachers educate young people to the interdisciplinary mentality?
- Which knowledge and skills are fundamental for the future?

- What should the school do on an organizational level to achieve interdisciplinary teaching?

Furthermore, they were followed by extensive arguments regarding two particular aspects related to the theme of continuity: a) the principle of legal, psychological, and pedagogical continuity; b) the Penelope effect.

Throughout Europe and in the rest of the world, the history of the school is strongly influenced by social policies and by the numerous reforms that have followed one another especially in recent decades following strong requests from International and National surveys on the learning and progress of some skills possessed by young people. The European Union has to deal with the results of the Program for International Student Assessment (PISA, 2018) of the Organization for Economic Cooperation and Development (OECD-OECD) and the program for the international assessment of adult skills (PIAAC 2016 -2019; OECD-PISA, 2018; SCIENTIX.EU, 2018). These surveys indicate that a consistently high proportion of adolescents and adults have insufficient basic skills. Italy, like other developed countries, now lives in a stagnant crisis - the subject of a lively debate - and is confronted daily, also from the point of view economic to keep up with the other countries with which it cooperates (ET, 2020). Its slow reform process for the entire education and training system started in the mid-1990s and has never been completed. In fact, it is widely documented that pupils, families and all the other actors connected to the school system, operate in a situation of "open construction site" comparable to a work that is continually reworked where plot and canvas while advancing, while simultaneously advancing, are undone. The reform thus takes on temporary characteristics, also compromising the practice of continuity which instead requires intelligent adaptability to psycho-social needs. Continuity is one of the pillars of the educational process. It means considering the entire training path as a progressive human development capable of enhancing all the skills acquired while recognizing their specificity within each type of school. Its ultimate aim is to support pupils to face the sense of bewilderment and confusion and to promote positive attitudes of trust in the face of sudden changes that will have to face in the future. In particular, the didactic continuity between the different school orders represents a crucial element for an educational action attentive to the needs of the pupils. A solution deemed possible for this could be to create opportunities for discussion and continuous dialogue and to help the entire training system by paying greater attention to the orientation, the methodologies applied and the search for innovative paths through interdisciplinarity.

### **Administration of questionnaire**

From these premises it is possible to read and interpret the recorded data to focus attention on the strategies and tools used. The questionnaire was prepared considering the sample of students (mainly female) and the issues identified. The selection of the questions was mainly focused on the detection of lived experiences, on the understanding of contents, on the misconceptions and prejudices attributed to the subjects (Rosetta Zan, 2017). The final model of the questionnaire arose from the issues addressed and the discussions that aroused the interest of the participants. The number of the students, to whom the following questionnaire was administered, is made up of two classes of secondary school Virgilio Marone - Avellino (total number about 50 students, only 8 of which are male).

<b><u>Why you choose this school?</u></b>	<b><u>Give only one answer (with a x)</u></b>
Expectations of parents	

Personal orientation	
Indication of the teachers of the previous school	
To share the same choice with girlfriends / friends	
For full satisfaction	
For other reasons	
Which subjects do you think are more difficult and demanding to study?	Give only one answer (with a x)
Literary subject	
Scientific mathematics subject	
No difference	
More	
Which subjects are most conducive to entry into the world of work?	Give only one answer (with a x)
Literary subject	
Scientific mathematics subject	
No difference	
Others	
For you which subjects do you consider more demanding and difficult to study?	Give only one answer (with a x)
Literary subject	
Scientific mathematics subject	
No difference	
Others	
Would you make the same choice to attend the same school career?	Give only one answer (with a x)
Yes	

Non	
Other	

Source: Authors' own drawing

**First question: Why you choose this school?**

Expectations of parents	0
Personal orientation	31
Indication of the teachers of the previous school	1
To share the same choice with girlfriends / friends	1
For full satisfaction	15

**Table 1 Source: Authors' own drawing**



Image 1 Authors' own drawing (google)

The majority of students believe that personal orientation is the first motivation for choosing the type of school. Full autonomous approval confirms this motivation with 29.2% of those who answered the questionnaire. About 2% of other needs are reached, such as: sharing the type of school with friends; following advice from their teachers. It is interesting to note that parents' expectations do not affect the decisions made by male and female students.

**Second question: Which subjects do you think are more difficult and demanding to study?**

Literary subject	13
Scientific mathematics subject	20
No difference	16
Others	1

Table 2 Source: Authors' own drawing

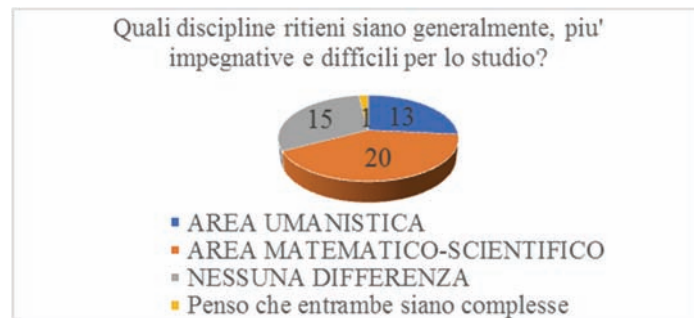


Image 2 Authors 'own drawing (google)

In this fourth question the personal vision of the subjects and the type of relationship experienced by each student is recorded. The most relevant data (n. 28 answers) show that the subjects of the mathematical-scientific area always appear more demanding and more difficult than the others. A curiosity is given by the only answer that indicates mathematics as a more difficult perceived discipline.

**Third question: Which subjects are most conducive to entry into the world of work?**

Literary subject	28
Scientific mathematics subject	4
No difference	11
Both Areas	1
Other (I am not particularly informed, it depends on the job, linguistic area)	1+1+1

Table 3 Source: Authors' own drawing



Image 3 Authors' own drawing (google)

In the third question, on the other hand, there is a majority of answers referring to the humanistic area (n. 28) while only 4 answers given for the mathematical-scientific area. Also, for this question it would be interesting to investigate which elements influenced the outcome of the recorded data.

**Fourth question: According to you which subjects do you consider more demanding and difficult to study?**

Literary subject	5
Scientific mathematics subject	28
No difference	15
Other (Maths)	1

Table 4 Source: Authors' own drawing

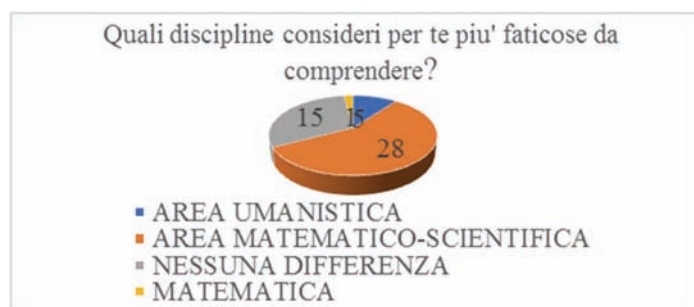


Image 4 Authors' own drawing (google)

In this fourth question the personal vision of the disciplines and the type of relationship experienced by each student is recorded. The most relevant data (n. 28 answers) show that the disciplines of the mathematical-scientific area always appear more demanding and more difficult than the others. A curiosity is given by the only answer that indicates mathematics as a more difficult perceived subject.

**Fifth question: Would you make the same choice to attend the same school career?**

Yes	44
Non	4
Other	0

Table 5 Source: Authors' own drawing



Image 5 Authors' own drawing (google)

In the last question we are asked to express the level of preference about the school attended. The result is totally positive as regards the approval and consistency in the choice made. Obviously, it is not

possible to verify how reliable this answer is also because the questionnaire reliable anonymous, is visible to the teachers of the same school and therefore susceptible to any influence. It would be interesting to deepen the data at least to understand the reasons related to this choice. In summary, the 5 graphs in the 5 figures show how the participants in the research were interested in the value and content of the various disciplines. The value of the survey is purely indicative but, briefly, some aspects are highlighted which are often overlooked for a careful initial analysis and for a better knowledge of the territory and the school context. The questions also prompted discussions and incentive to start a dialogical workshop in which each boy or girl was interviewed on the topic.

### **Objectives of the research**

- Building new ways of intervention and shared and personalized educational practices.
- Raise awareness of the importance of life skills, soft skills, and resilience in terms of well-being for the person and his needs.
- Present the main constructs closely related to early orientation.
- Promote communication, co-planning and sharing of strategies of a common educational project in order to promote school / family co-responsibility.
- Promote recognition and enhancement of people and all disciplines.
- To raise awareness of the importance of developing the skills that can be acquired in different contexts of one's life, through school, personal and professional experience (formal, informal, non-formal education).
- Enter the productive realities and monitor the local socio-economic contexts. Understanding where you start, what is produced, how and who does it, what professions, skills, technologies can be used.

### **Methodological choices and tools**

The difficulty of "doing a search" arises mainly from the significance, relevance and above all from the originality of the phenomenon, the problem, the behaviour, the event, which we want to analyse.

In this perspective, the object that is observed by the observer and the founding theoretical and teleological nuclei cannot be separated.

The same investigation and research activity risks becoming a form of "*amorphous technicality*" outside of a philosophical construct and a horizon of meaning, made up of ideals, visions, purposes and established by a guideline and reference principles (G. De Landsheere, 1982).

Furthermore, the choice of certain methodologies requires the possession of solid and precise skills that are based on rigorous standard. The latter also provide for the use of those theoretical-practical skills (reading, listening, data interpretation, etc.) which are often not valued or employed in depth.

An overall reading of what emerged from this experience, allows us to identify some elements that can prompt subsequent reflections and insights aimed at understanding how connected the development of a community is with the choice of a single person.

- First of all, only a few questions have been selected to avoid a mass of data to be collected and to concentrate the interviewee on the issues that they wanted to investigate.



- The 5 questions, in fact, revolve on the meaning and value that a young person can attribute to the disciplines of the humanities and scientific areas in reference to the growth of a society and a personal perception for themselves and for future generations.
- The group of students selected, for the administration of the questionnaire, is predominantly female so as to bring out the direct involvement of the female gender who usually suffers forms of discrimination and prejudice in the work sector.
- -The interest shown during the activity has fostered a concrete and massive climate of participation and participation that has also sparked the desire to open both further debates and comparisons of experiences at the end of the activity.

The simple, clear, fluid, and direct language questionnaire did not cause any problems or confusion for the interpretation of the questions. Times and places have been adequate and responsive.

These elements, therefore, constitute the first results of the proposed investigation.

Learning is a composite process through which a subject combines new acquisitions of information and knowledge with that which he possesses, reconstructing it in successive forms and with further meanings (Jonassen D.H. 1994) also through the use of technologies.

Nowadays there are many processes that bring about changes: problem solving and hypothesis definition; observation of reality and perceptual selection; information choice and cognitive decision; memorization and cognitive organization; cognitive autonomy and thought construction.

The control and monitoring processes of action and interaction with reality take place through the sharing and interweaving of knowledge.

All contents are well characterized by significance and usability. This is why we have tried to cure energy savings with discussions, tests, attempts, doubts, errors, and criticisms.

In this way, teachers worked to highlight how all the disciplines are interconnected with each other and allow the analysis of the activated processes. While the behaviours adopted, linked together, have been observed to derive benefits and to demonstrate how it is possible to collaborate with colleagues, operators, and different professionals to achieve optimal results.

The active participation of students, with the due distinctions of their cognitive styles that they use more frequently, also allows to enhance their attitudes and preferences that can derive from choices of pure interest.

It follows that the planning of cooperative work affects the improvement and consolidation of learning and the changes related to it in each of us, provided that we proceed with a standard organizational model of "*scientific democracy*".

That is, everyone's ability to overcome competition, specialist closure, personal jealousy in order to reach reciprocity and the availability of dialogue and participation as a deontological postulate can be preferred.

## **Knowledge, skills, and guidance**

The ultimate goal of the school, starting from the first cycle of education, was perceived as that of bringing out from every pupil a conscious citizen, capable of fulfilling the tasks that society will put to him, of solving problems, of sharing and collaborating with others, to choose independently and responsibly.

Above all, the importance of achieving skills is emphasized, the ability to orient oneself (Truda G. 2015) and to learn for life - lifelong learning - (Trunk Nada, 2005). There is no clear fragmentation of knowledge (Morin E. 2000), nor any contrast between disciplinary knowledge and skills. If the former decrease, the latter do not automatically increase. Skills allow you to use knowledge, connect it with each other and apply it to new problems. (Perrenoud Ph., 2004)

Therefore, knowledge and skills go beyond economic growth, to focus on building a more peaceful future and on an educational-training project that has among its objectives: the promotion of social inclusion, the protection of the planet, the creation of a lasting economic growth, open to all and sustainable. In this regard, orientation is inserted in the training process with the function of guiding and accompanying the person to the "choice" and constitutes an opportunity to build one's own future, an indispensable commitment, and a responsibility for the institutions.

The orientation does not aim to guide only the choices of contents of scientific or humanistic subjects but rather to promote and support an organizational and didactic model capable of laying the foundations to facilitate the acquisition of self-awareness, respect for the other, knowledge of the environment in which you live and the job prospects it offers. (Piciocchi P., 2018)

In short, a combination of skills intended as appropriate synergistic, communicative, and problem-solving skills (horizontal form of T) with a strong functional specialization (vertical form of T).

The paradigms of complexity (Morin E., 2000-2001-2015) and a liquid society (Bauman Z., 2002) redefine the central orientation of the school which now becomes that of educating / training students to make thoughtful and responsible choices, autonomous and flexible through the search for increasingly realistic and resilient tools and methods in relation to their future and to the demands of the working world. Thus, it can be understood how the orientation activity implies both the observation of disparate realities interpreted from different points of view, and an incessant and systematic synergy of actions between educational institutions and the territory to guarantee a type of orientation intervention not only in character purely informative but aimed at a process of global and permanent growth of the person who crosses all the disciplines within the study paths and starting from kindergarten.

The shared and universal objective of rediscovering the basic function of the school is evident, with a dynamic concept of learning (for the whole life span) aimed at equipping young people with knowledge, skills, strategic and expendable skills. Its task is also to encourage the global and integrated development of the person who learns to be, through research, mobility, cooperation, innovation, the recovery of new tracks to predict and overcome difficulties, to move in the field of work and to adapt successfully in the world.

However, the signs emerging from the difficult situation facing schools, especially in Italy, (European Union, 2019) are worrying and concern above all the communication between teachers and students,

which has often become tiring and distant also thanks to the preparation gap on the use of technological tools; the fall of interest in some school subjects, which are however conveyed in a disconnected and fragmented way; and the consequent fragility of the basic skills possessed.

Furthermore, always from an open dialogue, it was possible to detect an increasingly widespread discomfort of young people and young people in perpetual difficulty in finding horizons of meaning capable of orienting them in the present, of making them independent to plan the future, of supporting them in meetings with other cultures, to fortify them for the resolution of the great dilemmas that grip all humanity. (Piciocchi P. 2018; Truda G. 2019)

In this setting, it becomes unlikely to still think of creating unique, well-defined paths, inserted within organic and limited programs with a specific choice of content, skills to be acquired and a limited variety of methodologies to be applied. While it seems necessary and urgent to change course and set, from the root, a different vision of the same educational process.

In fact, the long and diversified Italian tradition of indications and programs has marked the evolution of pedagogical thinking and the history of the school by showing an asynchrony of regulatory-ministerial interventions and a lack of connection between the programs of the different school orders.

This becomes the starting point that marks the failure of the Italian school system, which proves to be weak, while the decentralization process starts, represented by the need to make the school participatory, more open to society and to the needs of the context in which find space for teachers, families, pupils but also local authorities, associations, the economic world.

The guiding school is the one centred on the dynamism of learning, of the instruction of exploration, of research, of the continuous problematization (Zan R., 2017) and of direct verification.

It is a school for female students to learn how to learn; to think critically, flexibly, creatively; so that they know how to put themselves in a democratic and interdisciplinary perspective; so that they know how to continuously report the data learned to their experiential Universe and manage to establish a productive relationship of interaction between the cognitive logical plane and the concrete reality.

## **Conclusions and reflections**

The orientation of the students becomes a modality and a continuous condition to help him to deepen his knowledge and to reproduce them also through other perspectives. Critical reflection, the commitment to find new solutions, allows us to adhere to the dynamism of society and to use the various communication channels and technologies in an intelligent, creative, and productive way. If this can become a significant and desirable value perspective, there is no lack of the possibility of constructing interdisciplinary mental attitudes. Today society is characterized by constant and rapid development. It is imperative to aim for a continuous adaptation to the new with a lively sense of "flexibility" and with a willingness to learn to change, to continuous verification and to problematization intended as opening, in a critical sense, to the real world. (Taleb N. N., 2007)

The complexity of planetary problems and the perceived insufficiency of "purely" scientific research based on the sector of knowledge pose the "usual" problem of overcoming disciplinary barriers by affirming the importance of the unity of knowledge. (Hadorn Hirsch G., 2008)

The reasons that justify interdisciplinary to face daily challenges are many and important:

- education in itself has a problematic and complex nature, but all disciplines combine to give a unitary and composite structure to knowledge.
- knowledge is totality on the theoretical and practical-operational level. It is broken down into disciplines both for the teaching-learning process and for convenience.
- research in the various sectors poses the need for interrelation and integration in order to offer operational and procedural units with cooperation and reciprocity between the different operators who work side by side in compliance with a specific professionalism in the various sectors.
- human thinking has a multidirectional function. The act of thinking affects the entire personality of the subject.

Interdisciplinary is an added value. It is a model of participation in learning understood here as a substantial change in behaviour that occurs through gaining experience (Dewey J. 1965) to achieve adaptable skills in different contexts.

Recent studies have produced a rich set of skills frameworks to be developed that cover the needs of companies (Bocconi S., 2016). Among these models, those focused on the good quality of teachers and educators play a key role since teachers are the reference points, adult educators in tomorrow's society and are considered the centrepiece of the education system (Kilpatrick S., Jones T., Barrett M., 2017).

Innovation and change require continuous collaboration as workers of the 21st century can no longer rely on the experience gained at the beginning of life but on the construction of knowledge and skills that takes place continuously and interconnected. (Morin E., 2001)

Promoting the culture of key competences as indicated in the EU 2030 agenda to build a digital citizenship, inclusive, aimed at respecting the environment and accepting the other, necessarily implies addressing unresolved issues related to other issues such as: diversity, ethics, equality, well-being, protection of the environment and health.

It therefore means "knowing how to read space and time"; select and pay attention to the resources and opportunities offered by the territory to which it belongs, by new technologies that reduce physical distances, and facilitate access to infinite information. It also means promoting sustainable development, in all possible ways. The latest achievements of science and technology project man towards the illusion of perfect knowledge and control. However, probability and uncertainty remain as indestructible elements in cognitive, decision-making, and human action interventions. (Galimberti U., 2018)

At the same time, the possibility of extending the objective of objective, collective well-being that animated the rise of globalization, giving biotechnological progress a strong dose of trust but also of uncertainty, is lacking. (Hawking S., 2016; D'alessandro J., 2017)

Therefore, it is necessary to analyse some emerged issues that seem to characterize the human condition in the third millennium:

- The inexorable transformation of work (World Economic Forum, 2016) and exponential technological growth trace a socio-anthropological scenario, not only for the economic

dimension, but for man's relationships with his interiority, with his fellow men, with the environment, with the weather.

- The advent of the Internet, web and social networks, machine learning, exponential growth of ICT and A.I. both the forms of communication and interaction (Donald M., Johnston R., 1989) and the idea of quality and quantity in economic production are changing.
- the world of work requires specific skills with appropriate guidance experiences and suggests that technology is no longer considered a human product, because it feeds back on man in principles of circular causality in which man and technology remain.
- the evolution of man connected to biological, socio-cultural and technological evolution, places at the centre of the challenges to be addressed in addition to climatic and energy issues, also pollution, the inadequacy of biodiversity, the destructive effects on the environment, the sad setting of diseases, the persistent phenomenon of world hunger and absolute poverty, the continuous flow of human beings who emigrate.

In the society of globalization, it is desirable to govern and manage complexity with balance and collaboration through open and participatory dialogue between school, university, research, the world of work and culture. In this way, training, to achieve a common and shared result, is conceived not only as a school / academic activity but also as a manifestation of civil commitment, a critical tool, a horizon of meaning. It can help make all human beings (regardless of age, gender, conditions ...) aware of their role within society and offer them the right means to orient themselves in the contemporary setting and to rebel against any form of oppression and absolutism.

You cannot show blindness in the face of the difficult issues that afflict our world and, each person, even if alone, in his choices, however, manages to instil hope, ideals, passions, attitudes of respect and respect, offer an example of positivity and optimism such as to curb attitudes of mistrust and conflicting states and to affirm the resources and importance of each for the achievement of a common goal and collective well-being. This work was deepened and completed with the administration of the questionnaire at approximately n. 100 students attending the University.

Priority objectives were: to identify good practices for reading the local and global context; motivate and involve territories, bodies, experts and all subjects involved in education, to take care of the real situation of pupils, of all levels and levels; to promote the construction of unitary information and training which is highly relevant and functional to the present and future society.

Everyone - managing to enhance their potential and skills - can manage to give their best to achieve, "that clean and fair world to which people want to belong". In this sense, making guidance an intervention methodology means moving in the perspective of the centrality of the subject in learning, with respect to which our priority commitment - as adults and as educators - consists in supporting the satisfaction of needs, the achievement of school success, to full implementation, social inclusion and inclusion in the world of work. (UNESCO, 2018)

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