

The ALFA Project

Research into an Innovative Secondary Education Initiative

Experiences of 29 young people in an active learning programme in East Clare, Ireland

by Julie Wells and Clifford Skoog

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Abstract

This research project evaluates educational and personal outcomes for a sample of participants in a rural Irish secondary school active learning initiative in the context of multiple current international research paradigms concerning student-centred education.

The study explores the experiences of 29 young people who had attended the ALFA (Active Learning for Adolescents) Project through the use of an online questionnaire. The core findings are that most of the surveyed ALFA Project students benefited from a pedagogical approach incorporating a developmentally oriented curriculum that offered opportunities for collaborative learning and for developing their own interests through project based learning. The importance for the students of positive student-teacher relationships, and for significant learning outside of school through exchange programs and field trips also emerged. The young people perceived themselves positively in terms of development in their individuality and ability to think for themselves, in their open mindedness and willingness to embrace education subsequent to their ALFA experience, as well as in their feelings of self confidence and self belief.

In addition interviews were conducted with six young people and three mainstream secondary teachers. The core findings from the interviews with both young people and teachers supported the survey findings in that ex ALFA students considered themselves and were experienced by teachers to be confident, mature, and self motivated in terms of their learning, and socially well integrated.

Overall the view of the ALFA Project from current students, ex students, and from mainstream teachers was positive. The study also highlights areas requiring further development, however this study suggests that these can be overcome given adequate financial resources. The overall positive approach and sense of responsibility fostered in the young people towards their education by their experiences in the ALFA Project also appears to have mitigated the problems that were identified.

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The ALFA Project in Context

The ALFA Project (Active Learning For Adolescents) is one of innumerable locally rooted initiatives worldwide that have come into existence because parents and educators became motivated to participate in shaping an education that differed from what was offered through schools that followed traditional models (Hadderman, 2002; Martin, 2002). It began in September of 2001 in East Clare, Ireland, and arose from needs identified by local parents and teachers for alternatives to what was on offer to adolescents in state education, partially in response to those students who were not thriving either socially or academically in school and/or those who were leaving school early. There were also students graduating from Raheen Wood, a local Steiner/Waldorf School (these are often called Steiner schools in Ireland and Waldorf schools in Europe and North America), whose parents wanted their children's education to continue to reflect an approach where attunement to developmental and social issues were integrated within the curriculum and instruction was not led by exams. The aim was to develop and implement a personalised and participatory curriculum for the students that would engage and empower them, whilst meeting the qualifications required for continuing education.

ALFA has developed a curriculum that addresses the same subjects as other schools, but emphasises the integration of different strands of knowledge together with related skills. It is distinctive in organising learning material which reflects (or mirrors) human activity throughout history. In the early years of such an education, for example, the narrative which the teacher employs with the children reflects the 'mythological consciousness' of the child (Hainly, 2009). Through the course of the years this changes to reflect the developing consciousness of the child or young person. In early adolescence the curriculum might address the emerging sense of self of the young adult through the presentation of biographies and stories of revolution in history.

Characteristically, a qualified tutor undertakes to bring a subject to the students in an immersive three or four week block, resembling the approach taken in Waldorf education (Edwards, 2002). Whether the subject is primarily academic or its focus is on an art or a craft, these are 'project' blocks in the sense that they incorporate things that the students make or create to bring their knowledge to fruition and to encompass their individual response to the learning that the subject entails. As blocks are completed, time is made for students to reflect on their work, set learning goals for the next block, and review the goals set for the previous one.

The ALFA Project sets out to integrate intellectual and academic content with practical involvement, with attention to the student-teacher, peer, and parental relationships that play roles in learning and human development. As discussed below, it embodies many practices, principles, and approaches that appear repeatedly in other alternative educational initiatives, in educational research, and in works of thinkers, teachers, and educational theorists.

Active Learning and the ALFA Project

The ALFA Project identifies itself as implementing principles of *active learning*. This term is widely used in educational theory and practice, and belongs to the constructivist approach to educational theory initiated by J.H. Pestalozzi and John Dewey, and pioneered in recent times by, among others, Jean Piaget, Lev Vygotsky, and most influentially, Jerome Bruner (Frank, 2008; Perkins, 1993; Miller, 2005). These ideas have also become integrated with

educational research focusing on the outcomes of learning processes (Marchese, 1998; Costa, 1998). According to O'Shea, 2003, active learning can briefly be described as:

the process of 'learning by doing.' It is an educational process whereby the learner is an active partner in the learning process rather than a passive recipient of knowledge.... In relation to methods of teaching, diverse approaches and methodologies are required. The methods chosen need to provide opportunities for the learner to think, do, and reflect. By including all three dimensions active learning seeks to provide for the whole person. [pg. 14]

However, both practically and theoretically, the concept of active learning has become increasingly associated with related pedagogical concepts such as *project based learning*, *participatory learning*, *experiential learning*, *discovery based learning*, *exploratory learning*, *expeditionary learning*, *cooperative learning*, and *holistic education*, among others. Characterising ALFA's pedagogy requires connecting what is understood as active learning with these related approaches, and the current practices which employ them. All of these approaches owe something to the constructivist insight--that genuine knowledge is directly reflected in the ability to solve problems and do things in the world and that knowledge is gained through processes offering an engagement beyond personal experience that can 'construct' for the individual relevant models and skills. It is an approach to education that emphasises learning to think by making meaning through doing. According to Applefield and Huber, et al. (2000), the central goal of constructivist education is to...

...stimulate thinking in learners that results in meaningful learning, deeper understanding, and transfer of learning to real world contexts. To accomplish this goal, a constructivist framework leads teachers to incorporate strategies that encourage knowledge construction through primarily social learning processes, in which students develop their own understanding through interactions with peers and the teacher. [pg.33]

Student Centred Learning

The approaches mentioned above also tend to characterise themselves as 'student centred.' Whilst student centred learning obviously goes together with constructivism, it more strongly connotes interpersonal, affective, and developmental contexts. It is the notion of student centred education that most adequately encompasses how schools have embodied and employed the constructivist principles. By examining more closely the spectrum of meanings for 'student centred learning' that have become associated with the constructivist diaspora it is possible to give ALFA's approach to education a specific context.

The Curriculum and Student Development

Understanding learning as an unfolding construction of meaning recognises the continuity of education with child development. Language learning, for example, depends on convergence of competency with an adequately rich social environment: from the perspective of the child, language is more 'invented' or 'discovered' than 'learned,' just as is true of walking (Gleitman & Newport, 1995). Similarly, both affective participation and cognitive processes that exercise imagination are seen as essential to both effective formal education and early child development (Kobayashi, 1991; Nielsen, 2006, Ritchart, 1999). Generally, 'student centred' means education whose first priorities are to provide the conditions where the student's initiatives of discovery, exploration, and invention can take root in the light of the curriculum.

In this initial aspect of being student-centred, ALFA Project curriculum design combines elements of student choice and developmental appropriateness. Both of these connect developmental issues with the form and content of education, the first on the basis of what students themselves choose as appealing and the second as what teachers identify, for example, as age appropriate.

Student choice is a guiding principle of the 'democratic' Sudbury alternative schools. These schools according to Wikipedia (2010) information, currently number about 40, are without a set curriculum or formal classes and are jointly governed by students and teachers. Learning is governed entirely by student interest, and ages mix in the learning environment. Research carried out by Gray & Chanoff (1986), into 69 graduates of the original Sudbury school, in Massachusetts, found that students had done very well in both college courses and in their career choices, subsequent to their graduation. Comments made by former students in relation to their educational experience were decisively positive and suggested that they considered themselves to be confident, self motivated, independent and hard working: "One respondent seemed to sum up many of the benefits expressed by the whole group, stating, 'I am attentive, communicate well, look people in the eye, ask lots of questions, work independently, and give lots of effort to whatever I do.'" [pg no. 207] This research project found similar comments made by the ALFA students, and also a common emphasis on how their atypical schooling enabled them to deal directly and openly with adults and their peers and to develop self confidence and an ability to "disagree with something if I didn't think it was right... [and] to challenge [other people's views]."

While the Boston Sudbury private school studied represents a demographic biased toward academic and career achievement, the extreme informality of Sudbury education perhaps serves to highlight the potency of student-centered approaches even in the absence of structured schooling. ALFA students are not as autonomous as Sudbury students, but they do take a consultative role in determining curricula and ALFA's groups of students typically regard themselves as choosing what they study: "the project work (allowed you to) do whatever you liked, whatever interested you."

With regard to curricula that are student-centered by virtue of teachers' attention to learners' developmental process, Steiner Waldorf schools, which implement a pedagogy based on indications given by Rudolf Steiner, are founded on principles of developmentally appropriate education, and their classroom activities are entirely guided by the vision of nurturing development. As Edwards (2002) points out, Steiner pedagogy elaborates "three cycles of seven year stages." Ginsburg (1982) briefly characterizes Steiner's three stages as imitative, imaginative, and intellectual, and correlates them with Piaget's three stages of cognitive development; sensori-motor, concrete operations, and formal operations. A recent and extensive three phase research study of 550 Steiner Waldorf secondary school graduates from 27 schools documents the benefits of an educational approach that is calibrated to the cognitive, affective, and social differences belonging to students of different ages (Baldwin, Gerwin, & Mitchell, 2005; Gerwin & Mitchell, 2007; Mitchell & Gerwin, 2008). Besides generally positive academic and career outcomes, Steiner Waldorf school graduates are seen to carry into their lives orientations that prioritize creativity, love of learning, and helping others. The study's summary profile of surveys of Steiner/Waldorf graduates highlights that 94% highly value self-reliance and self-confidence, 92% critical thinking and verbal expression, 91% practice and value life-long learning, and 90% tolerance of other viewpoints.

There is a connection between Steiner Waldorf education and the ALFA Project, in that many of the teachers employed by The ALFA Project have had backgrounds in Waldorf education. Additionally, the ALFA Project has developed a curriculum which reflects the kind of adolescent developmental concerns current in Steiner pedagogy, for example, balancing the need for increased autonomy with learning skills that strengthen a sense of mastery and structure.

Comments from and about the Steiner Waldorf graduates in the cited study as well as from the ALFA students in this study suggests that a sense of individuality, confidence in one's own capacities, and the availability of imagination and intuition in everyday activities, are among characteristics perceived as having been strengthened in the course of their schooling. In the previously cited Gerwin and Mitchell study, 45 college professors

responded to a survey about the Steiner/Waldorf graduates they taught, evaluating perceived qualities pertaining to leadership style and effectiveness, communication, judgment, ethical standards, and social awareness and caring for others. The qualities were ranked on a 1 to 5 scale, and the students received rankings ranging from 4.4 to 4.8 on all of them. Characteristic comments about these students from their professors include:

[I have taught] quite a few [former Waldorf students]. They have all been good students with high ideals and the discipline to back them up.

– L. Jackson Newell, President Emeritus, Deep Springs College, CA

She exhibited critical thinking skills more commonly found in older students.

– Margaret Pobywajlo, PhD, Director of the Learning Center, University of New Hampshire

[Steiner/Waldorf students] are more perceptive and open. They seem to have much better self-image and esteem.

– Charles F. Stegeman, Violin Professor and Chairman of Strings Department, Duquesne University

[Waldorf students show] personality, strength of character, ability to work well with others, creativity, strong sense of social justice and vocation.

– Jay Roberts, Instructor, Earlham College

The themes identified above are among those reflected in the students own comments about the outcomes of their Steiner/Waldorf education:

‘My ability to understand other people’s frames of reference and their outlooks on life. While I was a manager it was the key to my success...’

[To be] an independent thinker, experience life with a positive attitude, and to do my best to find the good in all situations and people.

Being able to express my ideas and thoughts . . . Being able to look at things on a very small scale in a very analytical manner but also being able to step back and look at how things fit together on a large scale, getting the whole picture.

I feel exceptionally free to explore my own path to fulfillment—and exceptionally supported in my endeavors. Also I feel as though I learned fairly early how to face fear and doubt, and work through it.

The belief that I can make a difference in the world, and the bravery to try to do it.

...optimism and the conviction to contribute to the making of a sustainable world

Waldorf taught me that ‘I can’t’ is not an appropriate answer to a problem.

These remarks from ex Steiner/Waldorf students and the teachers who subsequently taught them, closely resembles those elicited in the course of this research, as detailed below.

Self Motivation and Learning

A second idea connected with student centered learning examines the role of intrinsic as opposed to extrinsic motivation in learning. Intrinsically motivated learning fosters student achievement through the appeal of personal growth, autonomy, and an increased sense of self-worth. This makes these personal resources more accessible for the student in the learning environment. As supported by Vansteenkiste et. al. (2004), this leads to learning that is more effectively consolidated and hence more available in diverse contexts.

Extrinsically motivated learning depends on incentives that are indirect, and is perceived as meeting controlling requirements which have significance that is not integral to students sense of self (Vansteenkiste, Lens, and Deci, 2006, p.22). In this paradigm, extrinsic motivation is seen as subject to a means-end relationship where the value of the activity belongs to an outcome that can be separated from the activity itself.

The researchers whose experimental protocols have developed around these ideas of intrinsic and extrinsic motivation in learning, call their paradigm 'Self-Determination Theory' (SDT). Over time the theory's focus has emerged as distinguishing learning conditions which promote students' sense of autonomy or 'agency' from those which promulgate a 'controlling regulation' (Vansteenkiste, Lens, & Deci, 2006). Within the extensive literature exploring the SDT paradigm there is a recognition of its particular relevance for adolescents and pre-adolescents. Vansteenkiste et al. (2005), for example, designed three lessons on nutrition each of which were given to approximately 100 students aged between 11 and 12. In one of the studies, the students were given a questionnaire after the lesson, to discern aspects of their motivations with regard to the lesson, in order to categorise their activity as being either intrinsically or extrinsically motivated. They were then given a test on the material studied, which was followed up with monitoring of behaviour changes with regard to nutrition and exercise, and another test four weeks later. All three studies unequivocally indicated that conceptual processing ('depth of processing'), recall, behaviour change, and retention were stronger in students whose motivations could be identified as intrinsic. Another study (Walls & Little, 2005) examined relations between motivational styles and school adjustment in a sample of 786 students aged between 12 and 14, and found that the SDT paradigm strongly predicted school adjustment. The study suggests that students with a strong belief in their own agency and their motivational self-regulation make more effective adjustments to schooling.

Guay, Ratelle, and Chantal (2008) have produced a comprehensive review of many of the more than 200 empirical research studies employing the SDT paradigm which confirms its predictive value:

“The more students endorse autonomous forms of motivation, the higher their grades are, the more they persist, the better they learn, and the more they are satisfied and experience positive emotions at school. Moreover, research using a person-centered approach has shown that a motivational profile characterised by high autonomous [but] ‘controlled’ motivation is generally associated with positive outcomes, but that the most positive educational outcomes ensue from a purely autonomous profile. [The studies also show that] parents and teachers who are involved and autonomy supportive and who provide structure can contribute to the development of students’ autonomous motivation.” [p.237]

In conclusion, research suggests that curricular design and learning environments would benefit from closer attention to the student motivations that they foster, in particular the role of teachers and parents in sustaining autonomous orientations to learning warrants increased recognition.

ALFA Project students, based on their survey responses and comments, as discussed below, benefited from the kind of teacher support likely to encourage autonomous motivation. Also, because of the absence in ALFA classes of any context for what SDT theorists term 'controlling regulation', the achievements of ALFA students in their education are largely due to motivations which they have experienced as their own. Based on SDT theory, their learning should be expected to exhibit the 'depth of processing,' and retention predicted by that paradigm.

While the emphases of the SDT theory on motivational autonomy yield some clear indications for educators, it is puzzling that there are not more broadly based discussions in this literature of educational contexts that encourage intrinsic motivation. SDT theory includes 'affiliation' and 'community contribution' among its 'intrinsic goal contents,' but considerations of cooperative or collaborative learning, experiential learning, and project-

based learning, all of which have their own extensive literatures, including discussions of motivation, do not seem to have found their way into the primary SDT literature.

In the context of the ALFA Project, the weekly forums through which ALFA students select, plan, and evaluate curricula encourages each student to attempt to shape a learning programme that would offer intrinsic motivation, but the cooperative dimension of finding subjects that are practical, agreeable to all participants, and serviceable for longer term and common goals, mean that the actual curricula only occasionally conformed to the preferences expressed by individual students.

Some students felt that ALFA was 'lacking in lesson choice' and in need of greater subject diversity. Nevertheless, according to one of the ALFA teachers, the cooperative process of arriving at a programme of learning forged a sense, among the ALFA students, that they were engaged in learning that they had chosen themselves. Further, the adaptations made to arrive at a subject collectively, fostered among the students a 'team spirit' in subsequent learning.

“it (ALFA) made me realise that I don't have to be the best...the group is stronger if we can all do it”

Collective and Co-operative Learning

Collective, or cooperative learning, our third example of an educational approach with a genealogy linked with constructivism, emphasises the social construction of meaning and the coordination of communication. In its context, such 'team spirit' as described above appears as a key example of 'positive interdependence.' This is the “... feeling among group members that what helps one member helps all and what hurts one hurts all.” (Jacobs, Lee, & Ng, 1997)

Other cardinal features of cooperative learning, according to Jacobs, Lee, and Ng, include:

face-to-face promotive interaction; ...individual accountability (each group member feels responsible for their own learning and for helping their groupmates learn); the teaching of collaborative skills; and group processing (groups spending time discussing the dynamics of their interaction and how they can be improved). [pg no.1]

In his review of research into cooperative learning approaches compared to competitive and individualistic approaches. Kluge (1999), reported increased self-esteem, higher level reasoning strategies, higher subsequent test scores, greater affinity for classmates, and increased ability for self-direction. Barron (2000) in an experimental comparison of group versus individual problem-solving skills amongst a sample of sixth graders, aged between 11 and 12, found that when individual students were subsequently given an analogous but different problem to solve, the students who had earlier worked in groups performed significantly better.

Johnson and Johnson's 1989 meta-analysis of 352 cooperative learning studies also found higher levels of achievement for students engaged in cooperative learning, and Bossert's 1988 meta-analysis suggests that cooperative learning activities have benefits for students at all age levels, for all subject areas, and for a wide range of tasks, including retention and memory skills, as well as problem solving. Barron & Darling-Hammond's 2008 review of research confirms these findings, and that they are reflected in “hundreds of studies and several meta-analyses.” [pg. 10]

In his review of cooperative learning research, Jacobs (op. cit.), details its role in what he describes as 'thinking classrooms.' This suggests a corrective to a possible misunderstanding of the term 'active learning,' which is a common way of referring to many constructivist approaches to pedagogy. Whilst it is acknowledged that active learning does signify 'learning by doing,' the significance of doing is not limited to any kind of learning of skills. In an effective active learning environment students enlarge their capacities for thinking through inquiry, problem solving, and purposeful communication.

In summary, classwork and projects that function to engage cooperative or collaborative peer relationships offer students relevant and effective alternatives to competitively measured achievement, give experience in focusing communication skills, develop respect and appreciation for different styles of work and learning, and create opportunities to jointly structure and coordinate diverse tasks in service of a goal.

The typical presence of cooperative learning as recommended practice in much of the educational psychology that is concerned with 'character education' also testifies to its role in the growth of sensitivity and ethical orientation. (Lapsley & Narvaez, 2006, Vessels & Huitt, 2005). Berkowitz and Bier (2005) approximate a definition of character education as targeting

...a particular subset of child development, which we call character. Character is the composite of those psychological characteristics that impact the child's capacity and tendency to be an effective moral agent, i.e. to be socially and personally responsible, ethical, and self-managed.

Along with feedback-intensive steering of the curriculum described above, ALFA teachers often employ the types of cooperative learning that Kluge identifies as 'group investigation' and 'learning together.' Still more commonly, ALFA teachers organise learning through group projects.

Project Based Learning

'Project based learning' is the fourth focus of constructivist, student centered educational theory and practice discussed here. Johnson and Johnson (1994) and Panitz (1997) also specifically discuss its significance in the light of cooperative learning.

According to Thomas (2000) projects are:

...complex tasks, based on challenging questions or problems, that involve students in design, problem-solving, decision making, or investigative activities; give students the opportunity to work relatively autonomously over extended periods of time; and culminate in realistic products or presentations... Other defining features found in the literature include authentic content, authentic assessment, teacher facilitation but not direction, explicit educational goals, cooperative learning, reflection, and incorporation of adult skills.

Additionally, project-based learning units are often designed to promote student engagement by including features such as student choice, challenge, variety, and problems that diverge from students' expectations of what they meet in traditional schooling (Blumenfeld et al., 1991).

Studies comparing project-based learning with traditional approaches show that projects increase students' ability to define problems, and to support their reasoning with clear arguments (Stepien, Gallagher, & Workman, 1993; Gallagher, Stepien, & Rosenthal, 1992). Positive changes in skills, motivation, attitude toward learning, work habits, critical thinking, and problem-solving abilities are shown in other studies (Bartscher, Gould, & Nutter, 1995; Peck, Peck, Sentz, & Zasa, 1998; Tretten & Zachariou, 1995). Often, students who have difficulties with traditional instruction excel when they have the opportunity to work through projects (Rosenfeld & Rosenfeld, 1998; Meyer, Turner, & Spencer, 1997). Boaler (1997) carried out a three year longitudinal study which followed two British schools. The curriculum differed, one having a traditional curriculum and the second being project based, however the students were comparable in terms of their prior academic achievements and socioeconomic status. Participants in the project-based curriculum did better on the conceptual problems in their third year National Exam, and significantly more students passed exam in the project-based school versus those in the traditional school.

A broad study of the use of project-based learning, which sampled 1568 high school teachers between 2003 and 2006, found correlations with other reforms, such as 'teaching across the curriculum' (incorporating multiple subjects into lesson plans), student personalisation

(approaches that tailor learning to individual interests or needs), and community engagement (Ravitz, 2008). This approach also appeared to be central to progressive reforms in small high schools. Additionally, Ravitz found that 'the most professionally engaged teachers were more frequent users of project based learning and related practices.' [pg. 10]

Projects can be a natural setting for conjoining cooperative learning with intrinsic motivation, and realizing a project often brings together practical and academic tasks - or asks students to synthesise different skills and disciplines. The need for temporal organization across the span of a project also powerfully cultivates judgment and capacities for integrating diverse priorities. Gerlach (2008) discusses the role of project based learning in fostering the self-regulatory skills needed for adolescents to learn to 'scaffold' their own learning processes and create a foundation for further learning. Blumenfeld (et al., 1991) discusses the promotion of such 'scaffolding' in project-based learning.

The master-apprentice relationship is used as an analogy for the teaching-learning situation...like masters, teachers should scaffold instruction by breaking down tasks; use modeling, prompting, and coaching to teach strategies for thinking and problem solving; and gradually release responsibility to the learner.

As Vygotsky (1978) pointed out, guided participation helps keep learners near their zone of proximal development. Vygotsky's ideas are basic to constructivist principles: a 'zone of proximal development' characterizes the threshold between what a learner can do without help and what he or she can do with help, relative to the kinds of guidance that can be relevant in extending a student's abilities. The related concept of 'scaffolding,' independently introduced by Bruner (Wood, Bruner, & Ross, 1976), in this example describes the learner's interactions with a teacher to develop the organisational skills he or she may need to manage the integrations called for by their projects, facilitating their internalisation as 'metacognition' in the service of the student's increasing self-regulation. The specific relevance for adolescent learning of an approach offering guided participation in the context of the 'scaffolding' which belongs to the criteria of realizing a project seems obvious.

Interviewing seventh and eighth graders in a middle school, (13-14 year olds), Glasser (1990) observed that students participating in learning teams gained a sense of competence, and after presenting their projects to their class, 'they felt a sense of importance amongst their peers.' [pg. 89]. Thus project outcomes, in the light of adolescent development--because they reflect important occasions of self-expression--can be seen as more than the implementation of an integrated curriculum or preparations for contributing to the world: they can become enduring symbols of the students effort, interest, and originality; a personal landmark or a rite of passage for a young person on the path to becoming an adult.

We have stressed the importance of developmentally oriented education above, and such approaches can be particularly important for adolescents:

...motivation decreases as students move from elementary school to middle school. While some scholars attribute this decline to the changing psychological and physiological needs of adolescents, research challenges this reasoning by demonstrating that motivational change in middle school students stems from the characteristics of a students' learning environment. Adolescents need a developmental curriculum as opposed to the traditional teacher-directed curriculum...

A student's middle school experience is a critical time in which he/she searches for identity and develops a sense of self-concept. As students develop a sense of self-concept, they engage in metacognitive skill development as well. The adolescents' experiences with their peers and adults, their views of themselves, and their perceptions of their competence and success in school are ever changing. (Gerlach, 2008, pg. 98)

Adolescents necessarily give social and emotional learning a high priority, often at the expense of attention to teacher-centred classroom education. Project based learning, particularly when it also involves cooperative learning, offers opportunities for peer

relationships that support rather than distract from curricular learning. Ames (1984) found that some of the drawbacks of the personal vulnerabilities of adolescents in an educational setting can be mitigated when competitive goal structures and attendant ego-threat are minimized through a project centred focus on learning and mastery. In this context, some of the advantages of cooperative group work seem associated with how it can offer a learning environment that is developmentally relevant. Darling-Hammond et.al. (2008) cite a number of studies carried out between 1977 and 2006 which demonstrate that

Cooperative group work benefits students in social and behavioural areas as well, including improvement in student self-concept, social interaction, time on task, and positive feelings toward peers... [one study] found that both social and self-concept measures were related to academic outcomes.

Teachers responding in the Ravitz (2008) study of project based learning in high schools appeared to recognise the specific strengths of using this approach for adolescents. They were asked why they employed project based learning in their classrooms. For the largest percentage (N=51%), it was 'to teach skills beyond academic content; e.g., group work, presentation skills, management and 21st century skills.' The next largest percentage (N=48%) found that it made learning more personalised. Forty three percent responded that it made learning 'more challenging, varied and fun,' but only thirty nine percent gave improved teaching of academic content as a reason.

The Ravitz study also asked teachers about their use of fifteen common project types, the table below shows the percent of teachers who had conducted each of these types of project.

Percent	Kinds of Projects Undertaken with Students, by percent reporting
83	A written product to be shared with others (newspapers, politicians, brochures, posters) *
76	Writing a research paper *
74	Artistic products or performances (e.g., pieces of music, art, drama, videos, etc.) *
67	Observations or collecting data (e.g., water quality, plants or animals, traffic, opinions) *
62	Researching competing views on an issue and holding a debate*
61	Interviewing family or community members, documenting experiences or local history *
54	Creating a museum-type display or exhibit for others to experience *
52	Researching an issue in the community to make recommendations or a plan of action
52	Constructing simulations, or models (e.g. physical or computerized) *
50	Creating a computer-based product or program (e.g., web page, blog, games, etc.) *
50	Role-playing as stakeholders in simulated problems from real world (e.g., problem based)
40	Sharing data or interacting with students in other schools or experts (e.g., Project GLOBE) *
39	Creating a working version of a physical object, structure, device, etc. *
28	Creating and running a business or offering a service to the school or community *
25	Developing relationships with others via the Internet (ThinkQuest, WebQuests, I*EARN)

Those projects marked with an asterisk have also been an integral part of the curricula employed by the ALFA Project.

According to the Programme Coordinator, “You could say that the ‘projects’ are an aspect of ALFA which ‘showcase’ what we are all about. Through the activity of each project, the students learn by engaging with the process, resulting not only in a sense of achievement and confidence, but a growing understanding of themselves. Because ALFA designs its own curriculum, adapting it to each group of students, we are able to choose subjects and projects which we think will best meet the needs of the students both academically, socially and psychologically.”

Some of the kinds of projects, referred to in the table above, carried out with ALFA students, as reported by the Programme Co-ordinator and teachers, include:

A written product and/or research to be shared with others: ‘As part of English and Communications students undertook a number of projects. Students created brochures for our educational programme, made posters to advertise some of our fundraising activities. Research papers were also written on current topics or areas of interest, where the students were required to present the research to both their peer group and their parents. Throughout the learning processes they were able to demonstrate the skills and knowledge as they acquired them, and develop them with practice.’

Sharing data or interacting with students in other schools or with experts: ‘Students were asked to participate in an ‘open day’ for prospective students. ALFA students were involved in two ways. Firstly they assisted the teacher in creating miniature charcoal burners in a copper pipe, which produced a charcoal pencil. Secondly, each student created a segment of a video and slide show which would be shown to the prospective students. The project required the young people to formulate ideas and adopt the point of view of a younger student who was looking at educational options. Collaboration was also necessary to ensure that the video and presentation would have continuity and cohesion.’

*Artistic products or performances * (e.g., pieces of music, art, drama, videos, etc.):* ‘Art and drama are an integral part of the curriculum in most Steiner secondary schools and ALFA students have been lucky enough to have produced and performed plays each year. The scope of learning within the setting of a play is immense. The play is not only related to the other aspects of the curriculum but is specifically chosen to address the overall developmental needs of the group. The students are expected to gain an understanding of the themes of the play and to develop their performances to a high standard. Class time is given over to support this. They are involved in all aspects of the play; those who might be less interested or inclined towards acting, might have a small acting part and a larger supporting or technical role. Depending on their interests, they could be involved in set design or other technical aspects of the production including lighting, poster design, costumes, etc. The group works as a team, the teacher or director, as the guiding force, all developing and learning about different aspects of themselves through the play.’

For instance, ‘Les Miserables’ was performed in a year that the French Revolution was studied. The themes of idealism and revolution were woven throughout the powerful biography of Jean Valjean in the landscape of the French Revolution. Throughout this complex journey, the students are witnesses to human acts of generosity and selflessness of a man who has chosen his destiny and who stands for what he believes in. The student learns, not only the numerous particular skills involved in the process of the production, but about teamwork, self initiative and deadlines, as well as their own views on the various themes. They gain an enormous sense of self discovery, self-satisfaction and confidence to embark on future projects.

Another year, ‘Loves Labours Lost’ was performed in a modern context with 16 year olds, relaying with humour and cleverness, a number of human relationships, mishaps, misunderstandings and mischief in relationship to the universal and inter-generational theme of love. Additionally, students have written and performed plays with puppets they created themselves. Another short play was written in Irish about the Ryder cup in Ireland.

‘Drama provides an opportunity for young people to develop a wide range of skills and talents, whilst allowing them to explore their own sense of identity, through the many aspects and characters they meet in the process of the play.’

Creating a working version of a physical object, structure, device, etc.: ‘In the first year of The ALFA Project, we rented rural premises which were outside the electric grid. There was a stream on the land. During two science blocks students built a ram pump and a windmill to bring electricity and water to their building, giving them skills, insights and confidence which many from this group transferred to subsequent projects. They also developed a different appreciation of ‘electricity’.’

Creating and running a business or offering a service to the school or community: ‘The ALFA students built outdoor clay pizza ovens in the local community. Two or three times a year ALFA students make and sell pizzas at events that raise funds for the work of their programme. They have been involved in all aspects of this; making and baking the pizzas, lighting the fires, gathering wood, collecting monies, cleaning up, and accounting for the expenses and expenditure.’

Creating working version of a product: ‘In one of the ALFA projects a teacher addressed the ‘illusion’ that learning must take place in the school setting. The aim was to help the students to develop a bridge between the learning environment of ‘school’ and that of the community or the world beyond the classroom. The students were required to make things of their choosing and to find a mentor in the community who would have the skills to give them guidance and support as required to complete the project. Projects ranged from the building of a go-cart, a mountain board track, a dog kennel, a painting, a fiddle. The teachers support was in the preparation of the presentation of the completed ‘product’. The presentation was given to fellow students, parents in a semi-formal setting. While the enthusiasm and achievements were impressive, the learning curve for students of each step was marked; from choosing the project to the final presentation.’

Curricular Integration

Many of the kinds of projects listed above can offer opportunities for curricular integration, fostering multiple skills and types of learning, as well as serving as foci for interdisciplinary approaches. Unfortunately, Anglo-English trends towards assessing students on the basis of high-stakes testing tied to formalized standards that isolate academic subjects, have reduced the momentum for implementing and researching curricular integration. But the emphasis on such testing has not proven its value and is increasingly questioned. Advocates of interdisciplinary, multidisciplinary, or trans-disciplinary integration point out that:

analyses of studies (National Association for Core Curriculum, 2000; Vars, 1996, 1997; Arhar, 1997) point to the same general conclusion: Almost without exception, students in any type of interdisciplinary or integrative curriculum do as well as, and often better than, students in a conventional departmentalized program. These results hold whether the combined curriculum is taught by one teacher in a self-contained or block-time class or by an interdisciplinary team. (Vars & Beane, 2000)

Some proponents of curricular integration highlight its advantages in more efficiently preparing students for a changing world: reducing the duplication of learning in different subject areas, engaging students with applications in contexts that resemble real-life, framing learning toward wider, more inclusive perspectives, and emphasising approaches to skills and learning that will be more transferable between different employments. (ASCD, 2002)

A limited approach to curricular integration that has survived the pressure to teach isolated subjects as they appear in high-stakes tests is termed 'Science, Technology, and Society' (STS). This educational movement emerged in the 1980's. It was pioneered by Peter Fensham

(Fensham, P.J., 1985) and began to receive wide implementation in the 1990's. Its objectives include: (1) integrating economic, social, political, and ethical aspects of scientific and technological developments into science curriculum; (2) engaging students to examine diverse real world issues and grounding scientific knowledge in these, (3) enabling students to frame critical understandings of how science, society and technology meet, and (4) developing students' ability to make informed decisions, and take responsible actions that address issues arising from the impact of science. (Solomon, J. & Aikenhead, G. eds, 1994)

For example, as reported by the project coordinator and teachers, students at ALFA built and fired a lime kiln to burn limestone. 'Historically lime kilns were constructed near to a supply of limestone on the site for a new building. The burnt lime and sand were used for the lime mortar in the construction of the building before the introduction of modern cements.

The lime kiln was constructed with clay, sand and straw over a willow and hazel basket-like frame, the willow structure being "daubed" with the clay, straw and sand mix. Concepts were introduced and supported in an environment of 'active learning.' Fist-sized pieces of limestone were loaded into the kiln along with fuel for a 10-12 hour firing reaching 900 degrees. In the morning the burnt lime was extracted and 'slaked' for use as mortar and whitewash.

Through the activity of building and firing the limekiln, a variety of skills are acquired, in addition to creating a foundation for learning about various related concepts. The limestone cycle is studied, looking at the formation of limestone out of the living organisms in the seas over thousands of years to its return to the sea ready to be absorbed again by the shellfish. Experiments and explorations of related themes such as water and soil quality are undertaken. Out of this, the process of the carbon cycle was also studied, giving students the opportunity to understand exactly what 'carbon footprint' really means, leading them into discussions on this current global topic'.

This is in consonance with the ALFA approach of integrating science teaching across the curriculum. A concept like 'carbon footprint', for example, part of the concern with climate change, leads toward observations and discussion of meteorology, economics, and cultural history. Similarly, the use of maps in a geography lesson have been linked with visits to their 'originals:' seashores and mountain peaks, and integrated with activities such as painting and creative writing. The possibilities for structured experience allows students to form concepts and recognise facts in the process of exploration and discovery.

A considerable and current STS research literature is emerging with regard to mathematics and social studies, as well as science. Yager (2008) compared the approach, where 'students initiate questions, participate in discussions and research actions, and practice decision making through social interactions,' with traditional science instruction in middle school science classes. He found that, based on the same semester examination, students can learn as much about science concepts—while involved with a seemingly unrelated local issue as the course organizer—as do students who focus almost completely on concept mastery and use of typical laboratory activities suggested in a textbook.

More important, in the case of the application of concepts, students in the STS section were significantly more adept than were students in the Textbook section. Apparently, the STS approach provides more experiences with the application of concepts as a part of the regular classroom experiences and with the extension of science study and involvement with activities beyond the classroom and the textbook.

Students in the STS section were able to suggest and describe uses of concepts in new contexts. They were also more successful in proposing uses that were judged to be more unusual and more complex. Students in the Textbook section were unsuccessful in suggesting uses for the ideas and skills characterizing their school science experiences.

Another advantage of the issue-oriented STS approach was the significantly more positive student attitudes concerning science. The usual decrease in attitude following school study of science as reported in several studies did not occur when students were involved with issues, which characterize the STS approach. In fact, the attitudes were significantly more positive than they were initially.

More holistically, the convergence emphasised above between project based, cooperative, and developmentally relevant educational pedagogy can be seen as extending also to include principles that integrate the curriculum. Together with the weaving of different kinds of learning into projects and group work, the questioning of self and the process of becoming part of a larger world that belong to adolescence suggests educationally powerful unifying themes able to organise projects and learning environments:

Early adolescents often have questions about the physical changes they're experiencing, their identities, their relations with peers and adult authority figures, and their prospects. At the same time, they share with all of us concerns about life in a changing world, the environment, wealth and poverty, cultural diversity and racism, and so on. Moreover, their questions about themselves are often personal versions of a larger-world question, concerning, for example, the connections between conflict with adults and peers and conflict on a global scale. In other words, at the intersection of concerns from early adolescents and from the larger world, we can begin to imagine powerful themes that connect the two and thus offer a promising possibility for organizing an integrative curriculum (Beane, 1992)

The value of integrating curricula through how their subject matters reach into personal and societal dimensions is indicated in research done by Killeavy, Collinson and Stephenson (2000) on the professional practices of exemplary second level teachers in the United States, England and the Republic of Ireland. These teachers prioritised teaching their subjects as socio-culturally relevant with regard to global issues, for example human rights and the problems of developing countries, and also with regard to concerns that were personal, or belonged to the community.

Student-Teacher Relationships and Learning

All five of the constructivist approaches to education that we have discussed are embodied in the pedagogy of the ALFA Project; a developmental curriculum, the cultivation of intrinsic motivation, cooperative learning, and project-based learning oriented toward curricular integration, we have grouped together as 'student centred,' a term often used in contrast to schooling that is 'teacher directed.' A relationship between teachers and students which supports students' own construction of meaning hinges on a degree of personalization and a perception by students that the teacher respects them, encourages their work, and cares about what happens to them.

Positive, personal, respectful, and supportive experiences of communication with teachers have been shown to benefit students in many ways. As with the appeal of intrinsic motivations, a personalized relationship with teachers encourages students to draw more comprehensively on their own resources. It also leads them to take more responsibility for their own education in the light of emerging mutual respect between teachers and students, and assists in unfolding interpersonal skills that are important for maturity.

General correlations between student perceptions of teacher support and outcomes in secondary education are well established. For example, Yeung (1999), surveyed 226 U.S. students in class 7 and 8 (typically ranging in age from 13 to 15) on issues of self-esteem, interest in schoolwork, expectancy of completing high school, and perceived support from parents, teachers, and peers. These were then correlated with the students' grade point averages and school attendance records. The highest correlations were between teacher

support and interest, self-esteem, and grade point averages (.90, .80, and .50 respectively). Perceived caring from teachers also predicted positive social and academic outcomes in Wentzel's (1997) longitudinal study of 248 students followed from class 6 through class 8 (typically aged between 12 and 15). Brown (2004) in her study of middle school students, summarises the significance of positive, caring relationships in a learning environment as:

The link between caring and learning is very strong. Research suggests that the pervasiveness of a caring ethos and an empathetic regard and respect for students that focus' on individual and interpersonal growth and development can result in measurable, positive outcomes in schools. Caring schools foster a sense of loyalty, belonging, and responsibility, providing the foundation for intellectual, social, and moral growth. Research also shows that in quality middle schools, a sense of community and interdependence is present, a commitment to caring relationships is obvious, and a high success rate with young people in all areas is apparent.

Cornelius-White's sophisticated 2007 meta-analysis of learner and person centered models of education and teacher-student relationships focuses on variables that are either specifically constructivist, as detailed in the '14 learner-centred principles' (see appendix) given by the American Psychological Association (1997), or identified in terms of the similar, earlier, 'humanist' emphases derived from the work of Carl Rogers (Rogers, 1951). (See appendix for 14 Learner Centered Principles.) White's analysis synthesised 119 studies from 1948 through 2004, comprising 1450 findings and over 350 thousand students on the basis of what he termed 'teacher relational variables' reflected in pedagogical practice. He finds high correlation ($r = .45$) of students' critical and creative thinking, and that 'basic learning (IQ, verbal, maths) skills appear more associated with learner-centered teacher variables than success in more specific areas (grades, science, social science, batteries, and perceived achievement).'

In terms of specific affective or behavioral outcomes, person-centered education is associated with large increases in participation/initiation ($r = .55$), satisfaction ($r = .44$), and motivation to learn ($r = .32$). These findings seem to indicate that students become very engaged in learner-centered classrooms. The effects on self esteem ($r = .35$) and social connections and skills ($r = .32$) seem to indicate that students make better relationships with both themselves and others.

The teacher-student relationship factors into many different models of educational process framed within many different disciplines. But educational psychologists, and among these, those who employ constructivist paradigms, appear to have developed the most focused and extensive literature that addresses the content, character, and possibilities embodied in that relationship insofar as it shapes the outcomes of education.

Amongst psychology's constructivist educational models, one called 'Integrative Ethical Education,' as described by Lapsley and Narvaez (2006), is not uncharacteristic and has the particular advantage of illuminating the pedagogical approach employed in the ALFA Project: "Successful pedagogy.... must attend simultaneously to cultivating expertise on two fronts: conscious explicit understandings, and intuitive, implicit understanding." Balancing the role of understanding that is explicit and conscious against that which is implicit and intuitive facilitates describing what these researchers believe to be optimal learning environments. In these the assumptions are (1) that new information is "actively transformed in light of prior knowledge; and that teachers facilitate learning by engaging students in active cognitive processing about content and facilitating self-monitoring understanding," and (2), that:

learners are active constructors of meaning, competencies and skills, and that individuals build conceptual frameworks--declarative, procedural, and conditional-- in the process of learning to get along with others. And when these skills are practised extensively in multiple contexts they take on the qualities of tacit, implicit knowledge and the automaticity characteristic of the "unconscious" mind.

Proponents of this Integrative Ethical Education model give the example of 'coached apprenticeship' as one concrete embodiment that satisfies its objectives because it

involves using both direct and indirect instruction, mimesis and transformation, a focus on both content and process, tuning both the deliberate conscious mind and the intuitive mind. In an apprenticeship, the guide provides examples and models of skilled behaviour and provides theoretical explanation for why things are done one way and not another. At the same time, the apprentice is immersed in well-structured environments that cultivate appropriate intuitions. (Lapsley & Narvaez, 2006)

From a perspective describing learning environments with such features--familiar within the ALFA Project--the teacher-student relationship is a kind of final common pathway, carrying, for example, the scaffolding supportive of apprenticeship in the realization of a project and the promotion of autonomous motivation relative to curricular content, together with the mediation of collaborative learning and the moderation of the class social milieu to address diverse developmental needs.

Summary

With regard to student centred learning, the international research explored in this project clearly indicates the strengths of these kinds of programmes.

And we have seen, for example, from research into collective learning, that rather than yielding a single explanation, there is, as summarized by Barron (2000):

evidence that multiple kinds of processes are related to learning outcomes. These include opportunities to explain one's thinking (Cohen, 1994; King, 1990; Webb, Troper, & Fall, 1995), share knowledge (Coleman, 1998; Hatano & Iganaki, 1991), observe peers' strategies (Azmitia, 1988), share processes of monitoring solutions (Schoenfeld, 1989), provide critique (Bos, 1937), and engage in productive argumentation (Amigues, 1988; Phelps & Damon, 1989).

Additionally, our review and the following study of former ALFA students both appear to corroborate the educational research summary given by Barron and Darling-Hammond, 2008:

A growing body of research has shown the following:

- Students learn more deeply when they can apply classroom-gathered knowledge to real-world problems, and when they to take part in projects that require sustained engagement and collaboration.
- Active learning practices have a more significant impact on student performance than any other variable, including student background and prior achievement.
- Students are most successful when they are taught how to learn as well as what to learn.

The evidence from this review of international research has been instrumental in the development of our research project which explores the experiences of 29 young people who have been educated through the ALFA Project in East Clare.

'Whatever it is they have, I haven't put my finger on it, but whatever it is - it should be bottled'

- A mainstream secondary school teacher, about the ALFA students

Student Experience of Participation in The ALFA Project

How The Study Was Carried Out

A questionnaire was developed based on recent research into student centred active learning. The questionnaire was designed to gather both demographic quantitative data and qualitative data relating to the young people's ALFA experience. Information letters were sent out to 42 young people aged between 16 and 23, who had attended or were attending the ALFA Project. Consent forms were also sent to all parents of the young people who were under 18 years of age.

The questionnaire was designed using the on-line survey tool 'Survey Monkey.' Our review of international research indicated that the key areas to explore were teaching styles and curriculum, young people's current situations, the future aspirations of the young people, involvement in volunteerism, relationships within the teaching environment, opportunities to develop social networks, any gaps experienced in the curriculum, opportunities relating to work experience, and support to develop their own ideas and opinions. All young people were emailed or posted an invitation to complete the survey on-line or to contact the researchers to receive a hard copy by post. Over a period of 3 months, 29 young people completed the survey either on-line or by post. All demographic data was analysed using Survey Monkey whilst the qualitative data from the survey was extracted and coded manually.

In order to gather further in-depth qualitative data, invitations were sent out to 12 young people to participate in a face to face interview with a researcher. The young people were invited based on the three groups which had progressed through the ALFA Project, taking into account their current situation, in order to get as broad a range of views and experiences as possible. Of the 12 young people approached 6 agreed to meet the researcher to participate in a one-to-one interview of between 1 hour and 1^{1/2} hours. All 6 young people were given written information about the research prior to signing a consent form to participate. The interviews were semi-structured and guided by a flexible interview schedule, covering such topics as curriculum, social networks, relationships, gaps, transitions to other situations, life challenges, life joys, future hopes and plans and how things should change/develop in the ALFA Project.

In addition two mainstream secondary schools were contacted to invite teachers, who had experience of teaching ex ALFA students, to take part in a semi-structured interview. Three teachers were identified by the schools and all agreed to participate.

This research gives us a demographic profile of 29 ALFA students over a 7 year period. In addition the questionnaire has provided qualitative data from the 29 students' experiences of being part of the ALFA Project. The in-depth interviews with 6 of the young people has provided further insight into the ALFA experience and how the young people view themselves in light of this experience. Finally interviews with mainstream teachers have allowed us to incorporate an objective view of ex ALFA students and assisted us in identifying the benefits and drawbacks of this active learning project.

Who are the Young People who have Attended the ALFA Project?

The group contacted in relation to the survey consisted of 42 young people aged between 16 and 23. They all had at least 1 year's experience of being educated at the ALFA Project. Of those invited to complete the survey 70% (29) completed the questionnaire either online with the use of Survey Monkey or by post.

Fifty-two percent of the survey respondents were female, forty-eight percent male. Individuals were asked to identify their nationalities, 55% identified themselves as being Irish or half Irish, 20% as British, with the remaining 25% identifying themselves as either German or Dutch. Nearly all the young people described English as their first language outside the home (93%), whilst slightly fewer, 76%, spoke English as a first language at home. German, Dutch, Polish, or Irish were the languages at home among 24%. One young person identified Irish as their first language in the home.

The young people came from a variety of educational backgrounds prior to attending the ALFA Project, 45% had attended a Steiner Waldorf school and went directly to the ALFA Project, 48% had attended a mainstream school immediately before joining the project, and 7% had been home schooled. Given that there is a Steiner Waldorf school within the locality it is not surprising that many of the young people transferred directly from the Steiner school to the ALFA Project, however the number of young people who came to ALFA directly from mainstream/state run schools is equally high at 14. This shows that the ALFA Project has drawn students from both mainstream and alternative educational establishments over the period of its existence. The educational background of the parents indicates that the young people were coming from families where third level education had been attained by many, 90% of the mothers had attended university and 72% of the fathers. In terms of employment, 93% of mothers work outside of the home with the majority (61%) being employed or working in a voluntary capacity. For fathers the employment picture varied slightly, in that 75% work outside of the home, with the division between self employment and being employed by someone else almost equal. Nineteen percent of fathers were either retired or deceased. The range of work undertaken by parents was broad, 22% are engaged in work in the caring professions, 22% are involved in work on farms or gardening, 20% work in office or administration, and 18% are teachers.

What are the Young People Doing Now?

Of the 29 young people who completed the questionnaire 52% remain in education and 48% are working, looking for work or are on a gap year before attending college in the future. Of those remaining in education, 22% have moved on to mainstream secondary schools, 15% remain in the ALFA Project, and 15% are currently following a training or college course full-time. Of the group who are working, looking for work, or on a gap year 4% identified themselves as currently unemployed; 11% are working during a gap year, 11% currently working as volunteers, 4% describe themselves as combining third level education and work, with the remaining 18% working currently, of which 4% describe themselves as self-employed.

In terms of where this group of young people see their futures, 9 of the 10 young people, still in secondary level education, intend to go on to third level education. Of the remainder of the group--those already in college, working, unemployed, or on a gap year, 61% intend to continue in education or training, while 22% intend to take up employment. The remainder of the group, 17%, intend to travel, emigrate or are unsure at the present time.

The range of courses undertaken and intended to be undertaken by the young people lean strongly toward arts and design, these include music, drama, media, furniture design, and fashion design. Other characteristic areas of interest amongst the young people are environmental issues, international development issues, and volunteering in an international context. Employment opportunities in which the young people are currently engaged include retail, landscape gardening, casual work, and painting and decorating. Generally these positions were seen as temporary whilst considering or working towards their future goals.

The Experience of ALFA Education

From the survey group of 29, six young people are currently in mainstream education. This group of six young people was asked to rate specific aspects of their current mainstream educational experience alongside their ALFA experience. Table 1 below shows that whilst the overall quality of teaching in both mainstream and ALFA is not perceived to differ, certain elements of the teaching and the opportunities offered by the different systems are seen to vary. The table shows that this group of young people gave higher average scores to the ALFA Project than to the mainstream school system in the following areas; teachers/student relationships, collaborative learning, students' opportunities to develop their own interests within the curriculum, learning relevance and significance of field work/trips, and encouragement of parents/families involvement in the young people's education in ALFA education.

Table 1. *Comparison of Students Evaluations of State and ALFA Education*

	Mainstream/State Schools Average Score	ALFA Project Average Score
Overall Quality of Teaching	4.2	4.2
Relationships with Teachers	3.8	5
Quality of Social Networks	4.5	3.5
Importance of Collaborative Learning	2.5	4.4
Opportunities for Developing Own Interests through Project Work	2.4	4.5
Relevance of Field Work and Field Trips	3	4.2
Quality of Work Experience Offered	3.3	2
Support provided whilst on Work Experience	3.4	1.67
Extent Parents/Families were encouraged to be actively involved in Education	2.8	4.8

The mainstream state system received higher average scores than ALFA in the areas of quality of work experience available and the level of support provided to the young people whilst on work experience. ALFA students were encouraged to undertake work experience outside of school hours on an optional basis rather than as part of the formal curriculum. The young people also felt that the quality of the social networks provided by the state system was better than that offered by the ALFA Project.

The same group of six young people also compared selected elements of the curriculum in both the state and ALFA systems: encouragement to participate in the issues of ecology and the environment, global issues, such as world poverty and human rights, social justice and equality issues, e.g., racism, sexism, disability issues, fund raising events and projects and outreach activities, e.g., public relations, publicity, exhibitions, exchange programmes.

In comparing their experiences, as shown in Table 2, the young people scored all five of these equal or higher for the ALFA Project than for the mainstream system.

Table 2. *Comparison of Involvement in Issue-based work in state education and ALFA*

	Mainstream/State School Average Score	ALFA Project Average Score
Ecological & Environment Issues	3.2	3.7
Global Issues	3.2	3.2
Social Justice Issues	2.3	3
Fundraising Events	3.7	4.3
Outreach Projects	2.4	4.3

The remaining 23 students were also asked to evaluate their ALFA education experience. Because these young people did not necessarily have experience of the mainstream school system, they were not asked to make comparisons.

Table 3 below shows that these 23 ALFA students regarded relationships with teachers, the importance of collaborative learning, the opportunities to develop their own interests through project work, and the relevance of field work as strengths within the ALFA Project. This is congruent with the feelings of the ALFA students who are now in mainstream education.

A high percentage of students answered 'not applicable' to our questions about work experience, which suggests that almost half of the students may not have had opportunities to go on work experience while in the ALFA Project. This, together with the low rankings of work experience and its support by the group, indicated in Table 1, suggests a weakness in ALFA's provision of work experience compared to state education. Work experience has been offered as an activity outside of school which was optional for students. The ALFA Project intends to incorporate work experience into their formal programme in the future as a Fetac Level 5 Component Certificate.

The highest rankings given by the ALFA students represented in Table 3 were for collaborative learning, 95%, and relationships with teachers, 90%. These high rankings also suggest that the ALFA was successful in realizing core objectives of its student centred paradigm.

Table 3. *Students evaluation of the ALFA Project*

	Very Poor	Poor	Alright	Good/ Excellent	N/A
Quality of Teaching		5%	14%	76%	5%
Relationships with Teachers			10%	90%	
Social Networks		10%	5%	85%	
Collaborative Learning			5%	95%	
Developing Own Interests			15%	80%	5%
Relevance of Field Trips			5%	85%	10%
Work Experience	5%		15%	35%	45%
Work Experience Support	5%	15%	5%	25%	50%
Involvement of Family		5%	24%	57%	14%

The following three sections are based on input from teachers and staff of the ALFA Project, they outline the central principles and guiding objectives of the project in relation to relationships, field trips, and collaborative learning.

Relationship between Teacher and Student

The relationship between teacher and student has a central role in the learning process and the development of the young people at ALFA and is based on mutual respect. The tutor/teacher relationship develops through the work provided in the curriculum and programme. Each year the curriculum is adapted to the needs of the group. Choices are made which will give the students the opportunities to participate in studies or projects that meet the ‘psychological agenda’ of that particular group. This creates greater possibilities for engagement in the learning process. As the students mature they become more directly involved in those choices. They are asked to participate in lessons and projects, to reflect on their work and set learning goals for themselves. The teacher no longer works out of a position of authority but must still be someone the young person can look up to. While the teachers guide, encourage and support them, the regular opportunity to ‘take the baton’, enables the student to become responsible for their own success in the learning process. The teacher/student relationship relies on and develops out of the genuine interest the teacher has in supporting each young person to develop their potential. The sincere interest and respect the teacher brings to the relationship can then be reflected back by the student.

Field Trips/Class Outings

Field trips at the ALFA Project take place in a variety of different forms, such as trips away, lasting from a day to a week. They could be described as an 'off site learning block/experience'. ALFA has also on occasion held 3 week long off-site projects where the students are immersed in activity, away from everyday distractions. All field trips, as well as offering new opportunities for social interaction, are incorporated into the programme and connected to the curriculum. For example, a geography lesson lends itself to an outing to the sea or a mountain walk with opportunities for exploring the geological layout of the landscape, visiting caves or possibly a creative writing lesson from a mountain view. Three weeks working with a blacksmith or furniture maker near a forest and also studying botany would be another example. Moving out of the everyday space and rhythm invites new ways of relating to others and brings a sense of teamwork and bonding of relationships between teacher and student, as well as student and student.

Collaborative Learning

As the students move into adulthood they take on more responsibility for their learning. In 2009 ALFA piloted a programme for 16 and 17 year olds who were unsatisfied with the exam led secondary school system. Parents, teachers and programme coordinator met with the students, giving each young person the opportunity to feed into the choices of courses, as well as engage in work experience. According to the project coordinator, it worked out that everyone got something they had hoped for:

"Each student had agreed to arrange work experience, which they were responsible to organise for themselves. All students had a sense that they were part of the process and as a result they were well engaged with their work, attendance was good, and outcomes were of a high standard. Most of all I think that the young people gained a sense of confidence and achievement that they had a productive year. They learned that the areas they were most successful in were the ones they took greater responsibility for."

Young People's Views of Themselves

Of the 29 young people who filled out the survey 28 felt that the ALFA Project had made a positive contribution to their ability to reach their future goals (1 participant did not complete this question). The areas in which the young people felt they benefited were: the development of self confidence, the opportunities offered to develop free thinking, individuality, self motivation in learning, self belief in their ability to attain their goals, and an ability to work well with others.

Young people indicated that they developed self confidence in ALFA which they can now transfer to new situations:

'..it helped me be more confident in myself and (that) has helped me deal with the stressful mainstream education'

In addition, young people valued the ALFA Projects ability to support them as individuals and to assist them in developing their own ideas, values and beliefs:

'ALFA taught me to be more confident and have a lot more strength and conviction in my ideas and beliefs. The teachers were supportive of me throughout, strengthening individuality, variety of ideas and free thinking'

One young person wrote about individuality in both positive and negative terms:

‘...it is important to help people to realise it’s not about fitting in.....with being in a state school. I had gone beyond the point of trying to fit in which made life slightly more difficult for me there..... it’s more about being yourself and learning how to better yourself’.

A number of young people indicated that ALFA helped them to enjoy education and that they subsequently transferred that joy of learning to other situations.

‘Having the independent foundation that ALFA allowed me to create in myself, I enjoy the contrast between the two schools (state and ALFA).....and to my surprise really enjoy studying’.

A number of young people talked about how they had developed the skills within ALFA to study for themselves and contrasted this to young people they encountered in other learning situations:

‘I am studying for myself, whereas a lot of my classmates fight against it’.

Another young person described themselves as ‘a self motivated learner’ as a result of their experiences in ALFA and a belief that they are now prepared ‘for everything ahead ’ of themselves.

There is a strong sense amongst the young people that they are now able to realise their goals and that anything is possible for them in their lives.

‘They helped me realise my goals are possible and gave me the support; educational and emotional, to reach my goals’.

The questionnaire also asked the young people to evaluate to what level the ALFA Project assisted them in given social situations, by comparing themselves to their non ALFA friends/peers. Table 4 below shows the young people feel that the ALFA Project had a strong positive affect on them in the areas of working cooperatively and their ability to develop their own interests and pursue them. In all other areas the majority feel that ALFA had either a ‘good’ or ‘excellent’ impact on their ability to deal with the various situations, and the area of lowest positive impact is in the area of dealing with authority figures.

Table 4. *How has the ALFA experience impacted on dealing with social situations?*

	Very Poor/Poor	Alright	Good/Excellent	N/A
Diversity of people	8%	4%	88%	
Authority Figures	15%	31%	54%	
New Situations	4%	15%	81%	
Challenges	4%	15%	77%	4%
Co-operative Work		11%	89%	
Take Initiative	4%	15%	81%	
Personal Interests		15%	81%	4%

Areas for Future Development

Sixty-three per cent (18) of the young people who completed the survey did not identify any gaps or areas which they felt required further development.

One young person stated that they did not find the differences between the mainstream system and ALFA to be a problem and explained that 'things are taught differently in mainstream school, I had to get used to those changes', but also that they 'wouldn't recognise them as gaps, just differences'.

Of the remaining 37% (11) who felt that there were gaps, these were divided between the areas of academia and social interaction.

Two young people felt that ALFA did not make enough use of written text materials:

'...we were taught directly from the teacher ...so it was hard sometimes to go over topics by ourselves'.

Another young person expressed the opinion that ALFA students 'should be pushed more' academically in order to ease the transition from ALFA to mainstream:

'...I needed a bit more push academically and found I was not confident in my standard of academic knowledge' (when I entered mainstream school).

However, as one ex ALFA student pointed out,

'if students were in a position to complete their education in ALFA with the acquisition of FETAC qualifications, education can still be continued to third level 'without the stress of the Leaving Cert.' I was able to create an Art portfolio in ALFA that along with my FETAC awards allowed me to further my education....without a leaving cert....ultimately landing me my current job'.

Of those currently in mainstream education (N=6), 67%, were more acutely aware of specific academic gaps; these were the Irish language, maths, and the sciences:

'I found that my levels had fallen in both (Irish and maths) when I left (ALFA)'.

One student felt that 'mathematics wasn't covered very thoroughly, physics not at all, except for briefly in first year'.

Another young person felt the lower standard of Irish to be a 'huge problem'.

Another young person wrote about the realisation that while in ALFA 'little of the analytical disciplines i.e. the sciences had been learned'. This young person felt that ALFA should try to 'give sufficient attention to the mainstream course work particularly science'.

It seems clear that the transition to mainstream education from ALFA varies from person to person and is dependent very much on the individual.

One student said that adequate levels of support for learning difficulties were a limitation in ALFA, but s/he did not indicate any specific difficulty. The ALFA Project recognises the need for adequate resources to support students with diverse learning difficulties and capabilities.

There was little middle ground between the 85% who experienced the social aspect of ALFA as 'good' or 'excellent', and the 10% who described their social experience as 'poor'.

'It (ALFA) doesn't support you in your social life very much....not enough people to be able not (to) get on with an individual'.

A few students felt that ALFA did not provide enough opportunities for diverse social interaction, leaving them with limited choice in relationships, and feelings of social

isolation (N=7). For some students the opportunities given through their extra curricular project of developing the Fishbowl Youth Club went some way to countering the social limitations of their academic life in the ALFA Project.

One question raised by two students was whether 'elitism' was challenged adequately; it was suggested that there is an elitist attitude amongst those students in ALFA who had attended the local Steiner school prior to ALFA and that this needs to be raised as an issue by teachers and staff within ALFA.

Some of the conditions that may have limited potential social options for a number of ALFA students could also partially derive from the challenge of maintaining student numbers in a situation of limited funding and uncertain future prospects.

Survey Findings - Key Points

In summary, the ALFA project is clearly doing many things extremely well in the eye's of the 29 young people who completed the survey. The most evident of these are:

- 90% (26) identified positive student teachers relationships
- 95% (27) identified excellent use of collaborative learning,
- 80% (23) identified excellent opportunities to develop their own interests through the curriculum
- 85% (24) identified significant experiences through field work/trips

The impact of these aspects of the ALFA education is that many young people perceive a positive development in their individuality and ability to think for themselves, as well as in their open mindedness and willingness to embrace education subsequent to their ALFA experience. In addition, their feelings of self confidence and self belief are striking;

'The ALFA Project encouraged me to do what I believe in and to believe in what I do'

-a 23 year old former ALFA student

The young people also identify some developmental issues which they believe ALFA should be better able to address. These are:

- 69% (20) identified work experience and work experience support as needing attention in ALFA. This suggests that the ALFA's program would benefit from raising and maintaining consistency in work experience opportunities and work experience support
- 24% (7) identified difficulties arising from a limited social network within ALFA. Addressing continuity issues to enhance student recruitment and retention and thereby increasing the possibility of wider social networks seems a worthwhile priority for ALFA to move forward.
- 21% (6) identified a need to raise academic standards in some areas i.e. Irish, the sciences and maths
- 4% (1) identified a need to address gaps in specialist support work for those with learning difficulties

All the developmental issues noted above are plausibly due to lack of resources and could be addressed were the ALFA Project to receive additional funding, which is consistent, adequate and sustainable.

What Young People Say About Their ALFA Experience and How Mainstream Teachers View ex ALFA Students

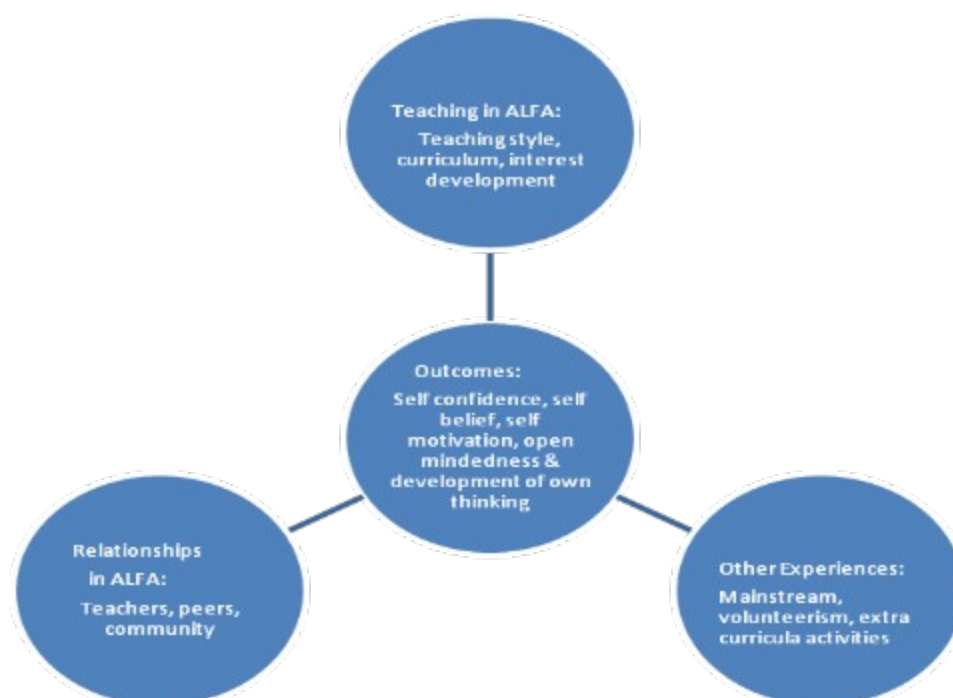
The 6 young people interviewed were aged between 16 and 23 and they had varying lengths of involvement with the ALFA Project. Two of the young people are currently in mainstream education, one young person is still part of the ALFA project, one young person is currently in third-level education and two of the young people described themselves as being on a gap year. The length of involvement with ALFA ranged from one year to three years.

From interviews with the six young people who have experience of the ALFA Project, four categories of interest emerged about how the young people experience the ALFA Project. These four are not necessarily present in all 6 interviews but are present in differing combinations across the interviews. The four categories are, (1) outcomes for young people of their ALFA experience, (2) relationships within the ALFA experience, (3) teaching style and learning within ALFA together with curriculum content within ALFA, and (4) the impact of their time with ALFA on other experiences. These categories were also strongly evident from the questionnaire findings. The discussion of the ALFA experience amongst the young people interviewed will further expand upon the significance of these categories. We also incorporate perspectives from the three mainstream teachers, to contribute to an objective view of the young people and how they are experienced within the mainstream schooling system.

Overview of Outcomes for Young People with ALFA Experience

When looking at outcomes several areas of interest emerged: increased self-confidence, self-belief and open mindedness, a love of learning, self-motivated learning, a sense of belonging, and a feeling of being able to attain whatever they wanted.

A number of additional factors impacted upon outcomes. These included relationships within ALFA, both with teachers and peers, the teaching styles and curriculum content applied within ALFA, and other experiences, which may or may not be connected to ALFA, including the young people's pre and post ALFA experience. Graph 1 below is a visual representation of the factors having an impact on outcomes.



Graph 1.

Self Confidence and Self Belief

All six young people interviewed identified an increase in self confidence :

‘I definitely became a lot more confident in ALFA’

Some students, as well as reporting increased confidence in themselves, could also clearly see how others had been affected:

‘...one [person] in particular...was really quiet and by the end of the year ...was loud and funny and extrovert...it’s a perfect example of getting up someone’s confidence....ALFA totally caters for that for students’.

It is clear that the development of self confidence was viewed by the students as a positive outcome of being part of the ALFA Project.

All 6 students also indicated that during their time at ALFA they had a sense of anything being possible in their lives and that they were supported to follow their dreams. One young person stated that she did not believe in her ability to write creatively until she went to ALFA. Another said that:

‘we were basically encouraged...if there was something we wanted to do, nobody ever told us that that’s impossible...we felt very empowered...we can do whatever we want with our lives and that was the main thing’.

This group of young people unequivocally identified their experiences in the ALFA Project as facilitating increased self confidence and self belief.

Mainstream Teachers View of Ex ALFA Students Levels of Self Confidence

Teachers corroborated the views of the young people, remarking that the young people they encountered had:

‘a lot of confidence and independence that comes from confidence.’

They went on to suggest that this confidence manifests itself earlier in ex ALFA students than in non ALFA experienced students, in their experience:

‘...(it’s) the kind of confidence you meet in pupils (non ALFA) when they’re gone from school 2 or 3 years’.

Teachers also described the ex ALFA students’ confidence as sustainable and a considerable asset:

‘they’ve held on to it – you thought it might be gone by Christmas’

‘(they have) confidence in themselves. I think that will bring you anywhere regardless of your academic ability... a sense of self belief’.

Below we will discuss the kinds of experiences which the students identified as contributing to the process of building self confidence and self belief.

Self Motivation and Joy of Learning

Three of the young people identified self motivated learning as a skill acquired during involvement in the ALFA Project. In addition, it was recognised that this is a very transferable skill which will serve them in their future lives:

‘...it was pretty much all course work (in ALFA) and we had to do that from self motivation...that I think will hugely help me in university as well’.

Two of the young people, whilst not talking directly about self motivated learning, recognised that ALFA had greatly assisted them in their formal learning. One stated that:

‘I am more active and constructive in school work and able to meet deadlines’

Whilst a second felt that the education he received in ALFA had definitely made him ‘more curious’, ‘more enthusiastic’ and more inclined to want to ‘find out more...to see what’s next’.

Mainstream Teachers View of Levels of Self Motivation amongst ex ALFA students

All 3 teachers agreed that the ex-ALFA students showed self motivation in their learning and often a love and enthusiasm for the learning process. Two teachers stated that they experienced the students as ‘wonderful for reading outside the course’...if you gave them scope they were a ‘mine of information’

One teacher went on to explain that they have an ‘appetite for information’ which leads to them experiencing learning as a tool to ‘enrich themselves.’

One teacher put this self motivation and joy of learning down to the young people’s maturity compared to their non ALFA peers and described them as having a sense of pride in, and ownership of, their work:

‘they seem more mature maybe than their peers...they take it (work) on as their own.’

It was also acknowledged that for those students who were academically ‘quite weak’ that they had the self motivation to ‘work on the skills they had’.

One teacher observed that, whilst the young people possessed self motivation, it often manifested in areas of personal interest and was not present in subjects described by some teachers as being at the ‘heavy end of learning’.

Open Mindedness and Questioning the World around Them

All six of the young people talked about how the ALFA Project had assisted them to become open minded.

‘things were much more open, you could talk about things’

One young person clearly acknowledged the significance to their learning of the openness of the teachers in ALFA:

‘their open mindedness makes it a lot easier to be taught’.

When talking about their relationships with the ALFA teachers, the idea that the quality of these relationships allowed them to begin questioning the world around them was relevant

for five out of the six young people. One young person described the personal benefits of this:

‘it made me a lot stronger in myself, it taught me to disagree with something if I didn’t think it was right whereas before I’d have just gone along (with it)’.

Mainstream Teachers Views of ex ALFA Students’ Open Mindedness and Ability to Question the World

All three teachers experienced the ex ALFA students as open minded and questioning. The students were described as ‘willing to discuss’ and as often being prepared to ‘give the other perspective’ which was perceived as generally positive for the whole class:

‘I think they have an awful lot to offer our students’

The outcomes for young people of being part of the ALFA Project, in terms of self confidence, self belief, self motivation, open mindedness, and an ability to question the people and the world around them, are fundamental to young people's healthy development and the way they experience themselves in the world. We will discuss later how the ALFA Project, in terms of its teaching style, the relationships within it, and other experiences outside of ALFA, such as mainstream schooling, contribute to or detract from these outcomes, and how these developed skills and qualities impact on the young people’s other experiences beyond ALFA.

Relationships

Student/Teacher Relationships in the ALFA Project

The young people talked about the importance and informality of the relationships they experienced with the teachers and how this gave them the opportunity to increase in confidence, particularly in the areas of developing their own opinions, values and skills.

All the young people stated that they felt that the relationships with teachers were based on friendship and that there was a culture of mutual respect:

‘they (the teachers) were just people you could talk to, have a cup of tea with, or something...we really interacted with the teacher...you felt a lot freer (because of the personal connection) to ask them questions and if there was something you didn’t agree with you could have a debate’.

One young person explained how a relationship based on friendship is more conducive to learning:

‘it’s different being taught by someone you don’t know...someone you don’t like... (it’s like when) a friend is explaining to you...you trust a friend’.

Another young person talked about how the skills developed from this close teacher/student relationship, are transferable to their future lives:

‘because of the close relationship with teachers I wouldn’t be nervous talking to adults, I find it really easy...it helped me going to interviews...(I) found it easy to express what I needed and to ask questions’.

However one young person, whilst recognising the strong relationship with some teachers within ALFA, felt the relationships were not all based on friendship and that while there was a culture of mutual respect within the project that it was not consistently applied:

‘it’s easy with ones you like and different with the ones you didn’t...all teachers thought it (the relationship) was (based on mutual respect) but not all teachers did it’.

Overall, however all six of the young people talked very passionately of the respect and admiration they have for teacher(s) and/or the project:

‘you had respect for the whole school, they are doing this for us , so we had respect for them’

‘(the teacher) would be one of the people I admire the most, with every student (they) had a really good relationship’

One student stated categorically that s/he was ‘the best teacher I’ve ever had’.

Mainstream Teachers View of Student/Teacher Relationships in the Mainstream System

All three teachers acknowledged that the ex ALFA students related differently to teachers than the young people coming from a mainstream educational background. One teacher felt that ex ALFA students are more ‘willing to talk to you’ as an adult without ‘cowering away’. She went on to explain that this was the way she experienced the students, both inside and outside of the classroom. Another teacher said that the young people were ‘much more mature’ in their approach to teachers than many other young people and that this often led to a process of negotiation between teacher and student:

‘they felt themselves that they could negotiate for themselves on what they should or shouldn’t do, on an adult level’

Overall the students were viewed positively in their approach to teachers and considered ‘genuine, nice, lovely, mannerly people’.

One of the teachers highlighted how the experience of teaching ex ALFA students differed from previous experiences by recounting a situation where a teacher who had been out on leave asked her of a particular student:

‘Is that sweetness for real?’

The confidence, maturity and well-rounded development of the ex ALFA students when participating in adult relationships, was clearly acknowledged and valued by mainstream teachers.

Peer Relationships

The young people in ALFA expressed mixed feelings in relation to the social experiences and the extent of social networks in the project. Whilst students appreciated the benefits of small groups:

‘it was really nice ‘cause it was such a small group’

Others recognised that a small group can be difficult for some young people:

‘everyone is a close friend in ALFA...(but) socially it was very limited... it was good (however) because we got to know each other so well’.

One young person said that the best thing about ALFA was the ‘friends I made there’ and that these friends were ‘friends I wouldn’t have met’ otherwise. Two of the young people

recognised that for some people the size of the group might be an issue; 'if you are a very social person it's very limited...(but) the smallness didn't affect me'.

Another young person, who struggled with the size of the group, due to being 'desperate to break out' as she had a desire for 'this big social thing' in a larger school, went on to say that the first thing she associates with the ALFA Project is 'the relationship with teachers, other students, everyone involved'. Whilst it is clear that students have differing experiences of and mixed feelings about, the quality of the social networks in ALFA, the social experience is one that the young people bring with them to subsequent situations. One young person recognised the impact ALFA has had on their social skills and that life would be different and less positive had they not attended ALFA:

'(before ALFA) I wasn't able to talk so much to people my own age. I think I'd have ended up in mainstream (school) out of social desperation, certainly I wouldn't have been doing so well now'.

Some young people compared the overall social experience in ALFA as like a 'little family', although one young person felt that 'it had become too much like a family' because the dynamics shifted away from the classroom.

Mainstream Teachers Views of Ex-ALFA Students Relationships with their Peers in the Mainstream System

The 3 mainstream teachers saw little difference between ex ALFA students and mainstream students in the way they integrated with peers. On the whole they were seen to 'stick together as a group' and that they 'mixed to a certain level' in the same way as other groupings did. However one teacher commented that some 'mainstream students went to Fishbowl youth club' as a result of the ex ALFA students giving them information about the club.

Relations with the Wider Community

The young people were asked about relationships with the local community and their view of how the ALFA Project is integrated into, and viewed by the local community. Five of the six young people said that they do not feel that the ALFA Project is known about or understood by the local community and that more work needs to be done in this area. It was felt that people view ALFA as being for 'hippy kids' or 'drop-outs'. One young person had got 'a lot of slagging' and had been told 'oh you don't know as much as we do'.

The young people feel that there is a difficulty in letting people know what ALFA actually does, although they also recognised that the exhibitions and plays were a great showcase for the projects achievements and 'made us more visible to the community'. All young people felt that there is a need to do more to increase the profile of the project in the community and to broaden the audience attending ALFA events. One young person felt that a big problem for ALFA lay in the fact that:

'some people can see it as not very stable...it's not very constant because of stopping and starting with groups',

They went on to suggest that this undermines the standing of ALFA in the community, as people feel unsure as to its permanence. It has to be recognised that funding, recruitment and retention of teachers has been problematic in the ALFA Project and this may have resulted in fluctuation of student numbers from year to year. In addition, there have at times been issues of students and parents identifying ALFA with particular teachers, and changes in staffing may have then impacted on student numbers.

Mainstream Teachers View of ALFA in the Wider Community

All three teachers agreed with the young people that knowledge of the ALFA Project was limited within the wider community and felt this to be disadvantageous to both the project and young people individually. One teacher stated that whilst community opinion was not negative that 'people don't know enough to form opinions'. Another teacher felt that had the ALFA Project a higher profile, more parents from the wider community might 'change their thinking', she added that she felt that many students 'would be very happy to follow a programme like that' and that the barrier is that the 'parents wouldn't accept' their children attending ALFA, because there has been a lack of awareness about the ALFA Project.

Teaching and Learning in ALFA

Teaching Style

As previously discussed, the young people grew in confidence due to the capacity of the teachers to support the development of students' ideas. In addition, all the young people identified elements of the structure and teaching style, such as, collaborative (group) learning, a 'hands-on' approach, flexibility, project work, and a student-centred/driven approach as supportive of their individual learning needs and those of others in the group.

'I think everybody benefited from it because that style of teaching allowed for everybody's learning patterns...(there was) space for that input into your own learning'.

One young person described their experience of being taught in ALFA:

'I loved the hands-on--that we were not just learning from text books...each teacher had different styles (of teaching), every teacher taught how they wanted to teach which brought more passion'.

When commenting on the flexibility of the structure and the impact this had on the lessons, the same young person went on to add:

'the lessons could go slightly strange ways as the teachers got easily sidetracked (but) you still learned on that subject'.

Another young person identified the 'original' teaching style in ALFA as something he now misses. Two young people described the style as 'fun' and felt that as a consequence it was a 'more effective way of learning...even homework was fun.'

The project based work and assessment under the FETAC system was also identified as supportive. One young person, who is continuing in education, said that she now misses this style of learning. Another felt that the FETAC assessment system 'allows you to do the best you can'. However it was also felt that whilst the style of teaching and the structure allowed the young person to work at their own pace, main subjects were undermined by the 'block' teaching. One young person felt strongly on this topic:

'...with main subjects it just stops after a month or two and you don't go back to it 'til next year--it was kind of annoying--and I kinda forgot what I'd learned after a while with main subjects'.

The work undertaken by the students in the ALFA Project included collaborative or group work. The young people described their experience of this as 'very helpful to each other',

and identified the group as 'being stronger if we all can do it'. Another young person clearly identified for herself the difference between mainstream education and ALFA education in this respect:

'In mainstream education I'd have been happy if the person next to me couldn't do it but in the ALFA I really wanted them to understand it'.

One young person summed up collaborative working in the ALFA Project in the following way:

'it was always about working together and seeing what each others qualities are'.

Two other young people felt the total lack of academic competitiveness within the project due to the teaching style:

'if someone doesn't know it then someone else will, it's a very good system'

Two of the young people talked about how they didn't really realise, at the time, that they were being educated:

'I hadn't really noticed that I was learning 'cause I wasn't sitting down for 3 hours at night with a text book'

'the way I felt about it I hated study and homework...you didn't think of it like that, it was just an experience'.

The teaching style was, however, not considered perfect by all the young people. Three of the young people felt some dissatisfaction in this area; two identified inconsistent teaching as a difficulty due to changes in teachers:

'we had a lot of teachers coming and going'

Another young person felt that some teachers were lacking in teaching experience:

'you can know something really well but not be able to teach it...some of the people just weren't teachers'.

Mainstream teachers all felt that the ex ALFA students took some time to adjust to a different teaching style. However the transition from primary to secondary education requires adaptation for all students.

One teacher commented on the fact that in mainstream education they 'rely heavily on books' and that in her experience the ex ALFA students gave the 'impression that they hadn't had [text] books before'. However mainstream teachers also commented on the students wide reading and that 'they were wonderful for reading outside of the course'.

Mainstream Teachers Views of Collaborative Learning Skills and a 'Hands-On' Learning Approach

One teacher felt that the ex ALFA students have the ability to 'take the initiative themselves' and presented a 'love of learning by doing'. This teacher went on to identify the difference as she perceived it between ex ALFA students and those educated solely through the mainstream system as based in levels of self confidence:

'whatever confidence they have...(they) don't shy away from people (like) some other kids (who) want to work with so and so only...they (ALFA students) work well with others.'

Another teacher felt that the 'learning by doing' approach gives 'children a bit of respect' and that out of that 'the initiative will come'. She went on to acknowledge that in her view this approach 'is certainly beneficial to us' and that in the future it is an approach which she would like to employ in non exam classes and particularly in Transition Year classes.

Another teacher felt that the students 'project work was brilliant' and that their ability to bring the approach into some subjects such as history and biology was enriching to the curriculum.

ALFA Curriculum

From the survey 85% (25) of the young people from the ALFA Project felt that the relevance, significance and quality of the field trips and field work were 'good' or 'excellent'. This was further confirmed by the young interviewees. The young people were able to identify the benefits of consolidating their classroom learning with fieldwork. One young person described the field trips as:

'kinda seeing what we'd learned about in reality,'

All the young people were able to identify, at least one element of the fieldwork or outreach projects undertaken, as impacting positively on their learning experience. The international exchanges had a notable impact on five of the six young people. Three of the young people stated that they were returning or had returned to their exchange location subsequently:

'I'm going back (to Germany) this summer... we stayed in contact with the school'

One young person had no recollection of participation in a fieldwork trip. Another young person, who was reluctant to participate in field trips initially and who described the experience as 'the worst time' at the time, could in hindsight appreciate the benefits the trip brought:

'I'm really glad I went and I really learnt from that experience...I learnt that things are very different in different countries...'

One young person identified one of the benefits as the way it brought the group together:

'everyone was looking out for everyone'.

Other young people also experienced a bonding in the group in relation to outreach project such as play preparation and performance:

'we had to support each other...(we) couldn't let each other down'

'the plays brought us all together as a group'

Two young people experienced participation in the plays as very significant in terms of their sense of belonging in ALFA or their personal challenges in life:

'it was the first time that I thought I'd stay in ALFA'

'the plays were a brilliant experience for me...I'd always wanted to be on stage but I was just so shy...'

All of the young people identified the plays, art exhibitions and national exhibitions as an important part of informing people as to the activities within ALFA and the high standard of achievement in the ALFA Project:

‘with the hydraulic ram pump and the windmill we entered it into the Young Scientist Exhibition up in the RDS, we did pretty well for a school with 12 pupils to have two projects in there.’

Mainstream teachers also identified the ex ALFA students’ involvement with art and drama projects as excellent and were ‘impressed’ with the roles they saw students take in a local arts festival. Within the mainstream environment the young people were viewed to be ‘active in extra curricula activities’ such as the school magazine, poetry and photography competitions.

When asked about the curriculum content three of the young people identified that their learning benefited from the varying opportunities created by the project having more than one location. This was due to the use of a log cabin in the woods which was described as ‘basic’. However this presented opportunities for curriculum development in terms of the construction of a windmill, a hydraulic ram pump and a compost toilet. One young person made the connection between these activities and main subject lessons:

‘we did physics around the hydraulic ram pump...we also made it relate to other subjects...with biology how the heart works like pumping the blood, pumping the water’

The range of subjects and the quality of the teachings of certain subjects was also discussed. For five young people the range of subjects was felt to be good and they were glad to have the opportunity to try diverse activities:

‘it was good to do these things...subjects that I would never have got the chance to do otherwise’.

One young person felt that the range of subjects was limited due to funding restrictions, and the needs and interests of some young people went unmet.

The young people were also asked if they felt that there were any areas of the curriculum that were lacking. A number of subject areas were identified, which were consistent with the findings of the survey, these being maths, Irish, and some areas of the sciences. Once again, those who returned to mainstream education could identify subjects where they were not as advanced as their mainstream peers:

‘maths we covered but we’re all very behind now...(Irish) wasn’t made enough of a priority’

Another area which was felt to be underdeveloped in the ALFA was Physical Education. One young person felt that ‘there was no emphasis on it at all’. Another young person said that in their experience of ALFA, sport was not considered a priority and that this could make it difficult for a young person interested in sport to be part of the ALFA Project:

‘anyone who’s very much into sports might not be the most inspired (by ALFA)’

Of the six young people interviewed, three were able to identify academic gaps or areas which needed improvement, as identified above, and three felt that there was nothing lacking and that, in their experience of entering mainstream education subsequently, they were ‘at a high enough level if any catching up needed (to be done)’.

Mainstream Teachers Views of the Young Peoples' Personal and Academic Strengths and Weaknesses

All three teachers supported the young peoples' view of where the academic gaps lay, these being in the area of mathematics and Irish. One teacher described the students grasp of science as 'decent' and went on to say that:

'more times they come at it very creatively and it seems to have given them a liking for the subject which others maybe (don't have)'

The gaps in maths and Irish were however considered quite significant by all three mainstream teachers. They felt that ex ALFA students were behind in maths as they 'hadn't the full foundation'. Concerns were also expressed as it was considered that maths is a difficult subject to catch up in, therefore this gap was seen to be a major academic 'flaw'. One teacher also suggested that none of the ex ALFA students were 'big into sport'. This teacher also felt that the students were 'not big into homework' and lacked some personal discipline. This, she suggested manifested itself in a lack of emphasis on punctuality, some minor difficulties with rules such as non-compliance with uniform requirements and not being strong on meeting deadlines. Whilst these shortcomings were discussed they were not overly dominant. Another teacher in the same school added that:

'I think as people they will be well rounded and conversational'

Another teacher stated that she found the students to be 'mannerly... not outspoken' or 'in anybody's face' and that 'they haven't come to any negative attention'.

All three teachers acknowledged the personal well roundedness of ex ALFA students in their approach to education. However it was also recognised by two of the teachers that the mainstream system could find it difficult at times to work with the young persons 'broad and differing approach' to education and learning:

'they found it hard doing things the way that we would be doing them and that's not to say that the way we were doing them was the right way'.

Another teacher acknowledged that the Leaving Certificate is a 'stepping stone' and that the system is there to 'focus on helping students to get the points they want'. She went on to say that ex ALFA students find it 'difficult to focus in on one particular area' in their approach to learning.

Personal Interest Development

Of the six young people interviewed five were able to identify areas of personal interest which had been supported by the curriculum in the ALFA project.

'everything is always encouraged, whatever you are interested in is always encouraged'.

The ability of the teachers to recognise the young people's personal interests and to integrate them into the curriculum and teaching was described very clearly by one young person in particular. She recognised that the teacher was able to integrate disciplinary issues with her own personal interest:

'my punishment was encouraging me to follow my interests really'

Generally the young people were also continuing to pursue these interests subsequently, either in further education or on a personal level. One young person described how an

experience of making a movie in ALFA had impacted on her choice of course in third level education:

‘we didn’t do movie studies...(but) I got the opportunity to put a movie together and that’s what I’m going on to do in University in September’.

However it does need to be recognised that this was not always the students experience, as in the case of a young sporting person who felt that their sporting interest and talent was not fostered. It was also suggested that a substantial group of young people would not be inspired to join the ALFA Project due to the lack of opportunity for sporting activities.

Mainstream Teachers Views of the Young Peoples Interest Development

Two of the teachers felt that the young peoples interests outside of school lead to some difficulties within the mainstream system as on occasion a student would be out of school for a period pursuing a personal interest and whilst this was acknowledged as ‘great for their overall development’ it was considered difficult to deal with in the school situation.

How the ALFA Experience Impacts on Other Experiences and Vice Versa

This sub-section will look briefly at how the young people and mainstream teachers feel the ALFA experience has impacted on other experiences and opportunities in their lives such as returning to mainstream education, their involvement in volunteer work and their interests and activities outside of the academic world.

Volunteering and Extra Curricular Activities

In the survey the young people were asked about their involvement with volunteering and whether their ALFA experiences influenced them in any way: 82% have worked as a volunteer and 36% of these felt that the ALFA Project had a direct influence on their decision to become involved with volunteer work. The remaining 64% were either influenced by family, friends, or youth workers. However the influence of youth workers, for some of the young people, was strongly connected to the ALFA Project, because of the development of a youth club in Scariff, known as Fishbowl. This was undertaken as a community development project by a group of young ALFA students and was considered a significant extra curricular activity by many of the young people in the ALFA Project and was seen by three of the young people as important to their own and other young people’s development:

‘between ALFA and Fishbowl... between both of them we felt very empowered’.

Of the six young people interviewed three had been involved in volunteering and two clearly identify the ALFA Project as having an influence on their decision to volunteer:

‘I wouldn’t be as motivated to do the things that I do (if I hadn’t gone to ALFA)... volunteering in Belarus...I’d probably just be hanging around...’

Mainstream Teachers Views of the Impact of Volunteering on Ex-ALFA Students

As previously discussed the ex ALFA students were viewed by mainstream teachers as very involved in extra curricular activities in certain areas within the school, as well as being considered to be active within the wider community.

Impact of ALFA Experience on Mainstream Education

Of the six young people, five had gone on to mainstream education at the time of the interview. Of these, four of the young people felt well prepared for the transition and felt that the ALFA Project had a positive influence on their subsequent education:

‘ I think they (ALFA) definitely prepared us well...I might not have finished secondary school...if I hadn't had ALFA’.

Another young person stated that without their ALFA experience they ‘wouldn't have felt so excited to go somewhere different.’ However one young person did feel ill prepared for their transition to mainstream education from the ALFA Project:

‘ALFA does not prepare you at all for mainstream education; the subjects are the same almost but its a completely different system, in the 1st year its very alienated (sic).’

Mainstream Teachers View of the Impact of ALFA Experience

In summary mainstream teachers generally found ex ALFA students to be confident, mature, self motivated in terms of their learning and socially well integrated. Academically they were seen to have ‘a good grounding and a good interest in subjects’. There were some perceived academic gaps, but generally, it was felt that students were ‘decent’ in most subject areas and that their creativity helped them to enjoy subjects:

‘...they come at it creatively and it seems to give them a liking for the subject.’

The teachers felt that those who may have been academically weaker had the confidence to ‘work on the skills they had. All three teachers described their experiences of teaching the ex ALFA students in mainly positive terms and one teacher summed it up thus:

‘They can learn from us and we can certainly learn from them. I think they have an awful lot to offer our students’.

Conclusion

The ALFA Project strives to implement, within the limits of the resources available to it as an independent educational initiative, an approach to curriculum, instruction, and educational setting that extensive research has indicated is particularly advantageous for adolescent learning. Specifically, through personalized student-teacher relationships ALFA intends to engage its students in predominantly project based and collaborative experiences that encourage them in finding their own motivations and learning about how they learn and achieve mastery.

As outlined in the body of the research and summarised in Tables 1, 3, and 4 above, our study shows that these guiding aims and objectives of the ALFA programme are strongly reflected in former students perceptions of the benefits of participating in ALFA. It is of considerable corroborative significance that the teachers interviewed outside of ALFA who were involved in former ALFA students' continuing education mostly emphasised the same positive characteristics in these students that the students themselves attributed to their experience within ALFA.

Although our evidence strongly supports that ALFA successfully realises its aims as regards empowering students to be able to take charge of their own learning, and to be able to work

cooperatively with others, some limitations appear with respect to particular elements of the curriculum that play a role in state education. It is probable that a combination of (1) the restricted resources characteristic of a fledgling initiative, and (2) the different priorities of ALFA in contrast with state education, are responsible for this. And while such issues do appear in our study, the respondents to our survey and participants in the interviews largely appear to regard them as a challenge to be met, which may be interpreted as a different kind of affirmation of ALFA's approach to adolescent education.

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Appendix

14 Learner-centered Psychological Principles (American Psychological Association, 1997)

The following 14 psychological principles pertain to the learner and the learning process*. They focus on psychological factors that are primarily internal to and under the control of the learner rather than conditioned habits or physiological factors. However, the principles also attempt to acknowledge external environment or contextual factors that interact with these internal factors.

The principles are intended to deal holistically with learners in the context of real-world learning situations.

Thus, they are best understood as an organized set of principles; no principle should be viewed in isolation. The 14 principles are divided into those referring to cognitive and metacognitive, motivational and affective, developmental and social, and individual difference factors influencing learners and learning. Finally, the principles are intended to apply to all learners -- from children, to teachers, to administrators, to parents, and to community members involved in our educational system.

Cognitive and Metacognitive Factors

1. Nature of the learning process.

The learning of complex subject matter is most effective when it is an intentional process of constructing meaning from information and experience.

There are different types of learning processes, for example, habit formation in motor learning; and learning that involves the generation of knowledge, or cognitive skills and learning strategies.

Learning in schools emphasizes the use of intentional processes that students can use to construct meaning from information, experiences, and their own thoughts and beliefs. Successful learners are active, goal-directed, self-regulating, and assume personal responsibility for contributing to their own learning. The principles set forth in this document focus on this type of learning.

2. Goals of the learning process.

The successful learner, over time and with support and instructional guidance, can create meaningful, coherent representations of knowledge. The strategic nature of learning requires students to be goal directed. To construct useful representations of knowledge and to acquire the thinking and learning strategies necessary for continued learning success across the life span, students must generate and pursue personally relevant goals. Initially, students' short-term goals and learning may be sketchy in an area, but over time their understanding can be refined by filling gaps, resolving inconsistencies, and deepening their understanding of the subject matter so that they can reach longer-term goals. Educators can assist learners in creating meaningful learning goals that are consistent with both personal and educational aspirations and interests.

3. Construction of knowledge.

The successful learner can link new information with existing knowledge in meaningful ways. Knowledge widens and deepens as students continue to build links between new information and experiences and their existing knowledge base. The nature of these links can take a variety of forms, such as adding to, modifying, or reorganizing existing knowledge or skills. How these links are made or develop may vary in different subject areas, and among students with varying talents, interests, and abilities. However, unless new knowledge becomes integrated with the learner's prior knowledge and understanding, this new knowledge remains isolated, cannot be used most effectively in new tasks, and does not transfer readily to new situations. Educators can assist learners in acquiring and integrating knowledge by a number of strategies that have been shown to be effective with learners of varying abilities, such as concept mapping and thematic organization or categorizing.

4. Strategic thinking.

The successful learner can create and use a repertoire of thinking and reasoning strategies to achieve complex learning goals. Successful learners use strategic thinking in their approach to learning, reasoning, problem solving, and concept learning. They understand and can use a variety of strategies to help them reach learning and performance goals, and to apply their knowledge in novel situations. They also continue to expand their repertoire of strategies by reflecting on the methods they use to see which work well for them, by receiving guided instruction and feedback, and by observing or interacting with appropriate models. Learning outcomes can be enhanced if educators assist learners in developing, applying, and assessing their strategic learning skills.

5. Thinking about thinking.

Higher order strategies for selecting and monitoring mental operations facilitate creative and critical thinking.

Successful learners can reflect on how they think and learn, set reasonable learning or performance goals, select potentially appropriate learning strategies or methods, and monitor their progress toward these goals. In addition,

successful learners know what to do if a problem occurs or if they are not making sufficient or timely progress toward a goal. They can generate alternative methods to reach their goal (or reassess the appropriateness and utility of the goal). Instructional methods that focus on helping learners develop these higher order (metacognitive) strategies can enhance student learning and personal responsibility for learning.

6. Context of learning.

Learning is influenced by environmental factors, including culture, technology, and instructional practices.

Learning does not occur in a vacuum. Teachers a major interactive role with both the learner and the learning environment. Cultural or group influences on students can impact many educationally relevant variables, such as motivation, orientation toward learning, and ways of thinking. Technologies and instructional practices must be appropriate for learners' level of prior knowledge, cognitive abilities, and their learning and thinking strategies. The classroom environment, particularly the degree to which it is nurturing or not, can also have significant impacts on student learning.

Motivational and Affective Factors

7. Motivational and emotional influences on learning.

What and how much is learned is influenced by the motivation. Motivation to learn, in turn, is influenced by the individual's emotional states, beliefs, interests and goals, and habits of thinking. The rich internal world of thoughts, beliefs, goals, and expectations for success or failure can enhance or interfere the learner's quality of thinking and information processing. Students' beliefs about themselves as learners and the nature of learning have a marked influence on motivation. Motivational and emotional factors also influence both the quality of thinking and information processing as well as an individual's motivation to learn. Positive emotions, such as curiosity, generally enhance motivation and facilitate learning and performance. Mild anxiety can also enhance learning and performance by focusing the learner's attention on a particular task. However, intense negative emotions (e.g., anxiety, panic, rage, insecurity) and related thoughts (e.g., worrying about competence, ruminating about failure, fearing punishment, ridicule, or stigmatizing labels) generally detract from motivation, interfere with learning, and contribute to low performance.

8. Intrinsic motivation to learn.

The learner's creativity, higher order thinking, and natural curiosity all contribute to motivation to learn. Intrinsic motivation is stimulated by tasks of optimal novelty and difficulty, relevant to personal interests, and providing for personal choice and control. Curiosity, flexible and insightful thinking, and creativity are major indicators of the learners' intrinsic motivation to learn, which is in large part a function of meeting basic needs to be competent and to exercise personal control. Intrinsic motivation is facilitated on tasks that learners perceive as interesting and personally relevant and meaningful, appropriate in complexity and difficulty to the learners' abilities, and on which they believe they can succeed. Intrinsic motivation is also facilitated on tasks that are comparable to real-world situations and meet needs for choice and control. Educators can encourage and support learners' natural curiosity and motivation to learn by attending to individual differences in learners' perceptions of optimal novelty and difficulty, relevance, and personal choice and control.

9. Effects of motivation on effort.

Acquisition of complex knowledge and skills requires extended learner effort and guided practice. Without learners' motivation to learn, the willingness to exert this effort is unlikely without coercion. Effort is another major indicator of motivation to learn. The acquisition of complex knowledge and skills demands the investment of considerable learner energy and strategic effort, along with persistence over time. Educators need to be concerned with facilitating motivation by strategies that enhance learner effort and commitment to learning and to achieving high standards of comprehension and understanding. Effective strategies include purposeful learning activities, guided by practices that enhance positive emotions and intrinsic motivation to learn, and methods that increase learners' perceptions that a task is interesting and personally relevant.

Developmental and Social Factors

10. Developmental influences on learning.

As individuals develop, there are different opportunities and constraints for learning. Learning is most effective when differential development within and across physical, intellectual, emotional, and social domains is taken into account. Individuals learn best when material is appropriate to their developmental level and is presented in an enjoyable and interesting way. Because individual development varies across intellectual, social, emotional, and physical domains, achievement in different instructional domains may also vary. Overemphasis on one type of developmental readiness--such as reading readiness, for example--may preclude learners from demonstrating that they are more capable in other areas of performance. The cognitive, emotional, and social development of individual learners and how they interpret life experiences are affected by prior schooling, home, culture, and community factors. Early and continuing parental involvement in schooling, and the quality of language interactions and two-way communications between adults and children can influence these developmental areas.

Awareness and understanding of developmental differences among children with and without emotional, physical, or intellectual disabilities, can facilitate the creation of optimal learning contexts.

11. Social influences on learning.

Learning is influenced by social interactions, interpersonal relations, and communication with others. Learning can be enhanced when the learner has an opportunity to interact and to collaborate with others on instructional tasks. Learning settings that allow for social interactions, and that respect diversity, encourage flexible thinking and social competence. In interactive and collaborative instructional contexts, individuals have an opportunity for perspective taking and reflective thinking that may lead to higher levels of cognitive, social, and moral development, as well as self-esteem. Quality personal relationships that provide stability, trust, and caring can increase learners' sense of belonging, self-respect and self-acceptance, and provide a positive climate for learning. Family influences, positive interpersonal support and instruction in self-motivation strategies can offset factors that interfere with optimal learning such as negative beliefs about competence in a particular subject, high levels of test anxiety, negative sex role expectations, and undue pressure to perform well. Positive learning climates can also help to establish the context for healthier levels of thinking, feeling, and behaving. Such contexts help learners feel safe to share ideas, actively participate in the learning process, and create a learning community.

Individual Differences Factors

12. Individual differences in learning.

Learners have different strategies, approaches, and capabilities for learning that are a function of prior experience and heredity. Individuals are born with and develop their own capabilities and talents. In addition, through learning and social acculturation, they have acquired their own preferences for how they like to learn and the pace at which they learn. However, these preferences are not always useful in helping learners reach their learning goals. Educators need to help students examine their learning preferences and expand or modify them, if necessary. The interaction between learner differences and curricular and environmental conditions is another key factor affecting learning outcomes. Educators need to be sensitive to individual differences, in general. They also need to attend to learner perceptions of the degree to which these differences are accepted and adapted to by varying instructional methods and materials.

13. Learning and diversity.

Learning is most effective when differences in learners' linguistic, cultural, and social backgrounds are taken into account. The same basic principles of learning, motivation, and effective instruction apply to all learners. However, language, ethnicity, race, beliefs, and socioeconomic status all can influence learning. Careful attention to these factors in the instructional setting enhances the possibilities for designing and implementing appropriate learning environments. When learners perceive that their individual differences in abilities, backgrounds, cultures, and experiences are valued, respected, and accommodated in learning tasks and contexts, levels of motivation and achievement are enhanced.

14. Standards and assessment.

Setting appropriately high and challenging standards and assessing the learner as well as learning progress -- including diagnostic, process, and outcome assessment -- are integral parts of the learning process. Assessment provides important information to both the learner and teacher at all stages of the learning process. Effective learning takes place when learners feel challenged to work towards appropriately high goals; therefore, appraisal of the learner's cognitive strengths and weaknesses, as well as current knowledge and skills, is important for the selection of instructional materials of an optimal degree of difficulty. Ongoing assessment of the learner's understanding of the curricular material can provide valuable feedback to both learners and teachers about progress toward the learning goals. Standardized assessment of learner progress and outcomes assessment provides one type of information about achievement levels both within and across individuals that can inform various types of programmatic decisions. Performance assessments can provide other sources of information about the attainment of learning outcomes. Self assessments of learning progress can also improve students self appraisal skills and enhance motivation and self-directed learning.

** The development of each principle involved thorough discussions of the research supporting that principle. The multidisciplinary research expertise of the Task Force and Work Group members facilitated an examination of each principle from a number of different research perspectives.*