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Using Gardner's Theories of Intelligence in the teaching of Early Childhood Education

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Abstract

This small-scale qualitative study was carried out to examine a perceived gap in the teaching and learning experiences of a group of students in a two-year childcare course of a specific College of Further Education. The distinction between teaching and learning will be discussed, while acknowledging Gardner's theories and encouraging cross-curricular interactions within the Further Education setting. Students were asked to identify how they thought they learnt material in the context of Gardner's Theories of Multiple Intelligences to see if it would assist them in addressing a persistent assessment problem. The research involved an individual interview at tutorial, a follow-up group interview and a small-scale student-centred application of the resultant findings that could be addressed in a cross-curricular approach using resources already available in the setting. Students experienced a new type of learning, which centred on each individually identifying their own best learning methodology that could be applied to any learning situation presented thus opening up learning as a goal not a challenge. More importantly, students were involved in a process, which allowed them to contribute to greater understanding of a persistent learning problem on the part of students in their college department.

Key Words: Gardner's Intelligences, learning, teaching, diversity, Further Education

Introduction

In any educational setting, the matching of scarce resources and students' needs is a constant feature of the process of learning in the setting. Those charged with imparting knowledge, vocabulary and competencies to students often struggle to comprehend when students do not necessarily perceive what they, as educators, find easy or understandable. Where such knowledge needs to be deeply understood to the extent that it can be applied in a work setting, this mismatch can become frustrating for everybody. Such was the case in the Childcare department in this small-scale action research and the college in question chose to look at the problem posed in a way that had the potential to impact on students' learning styles for years to come.

Context

Further Education by its very nature is a complex arena where the diversity of learners, distinct institutional contexts and changes in the nature of work all interact (Young & Lucas, 1999). The Further Education College in question for this particular study is operated by the City of Dublin Vocational Education Committee (CDVEC), offering Post Leaving Certificate (PLC) courses to adults ranging in age from 17 to 70+. It is in an inner-city location although its student cohort is not necessarily inner-city based. The College is in a disadvantaged area and was originally a Second Level school that fifteen years ago embraced Further Education using a dual approach with a mix of Second Level students and further education students all within the same campus. Five years ago the last Second Level students completed their education and the College fully embraced a singular Further Education entity. The College has no current Second Level students but the Second Level traces remain in its approach to teaching and learning and the approach of teachers to problem solving and enabling students to overcome difficulties they face. Staff spend considerable time and thought in finding solutions which are student-centred without taking the initiative from the student.

The particular College offers a wide variety of programmes from part-time to full-time courses with Department of Family Protection-supported Back to Education Initiative (BTEI) students making up 25% of its part-time students. Additionally Department of

Family Protection-supported Back to Education Allowance (BEA) and Vocational Training Opportunities Scheme (VTOS) students make up at least 30% of the full-time student cohort. Within this College of Further Education where students come from a wide catchment area between Donegal and Cork, it is not unexpected that challenges of learning present themselves. Students in a Further Education College are often identified as those who have somehow landed between the secondary and tertiary levels of education where such a College would provide “a bridge between school and university and between education and employment by providing people with new skills, knowledge and qualifications and allowing them progression along a wide range of pathways” (Young & Lucas, 1999, p.99). The nature of Further Education within the context of a unique economic climate occasioned by International Monetary Fund (IMF) bailouts and austerity measures in 2010 and 2011 has been focused on cost effectiveness and is funding-constraint centred.

In the College discussed there is a variety of distinct departments: Childcare and Early Childhood Education; Special Needs Support; Health Care and Social Care; Youth Work; Social Studies; Creative Arts – Media, Art & Design, Performance (acting); Counselling Skills and Counselling Professional Studies; Tourism and Travel and IT (networking). It is not surprising then that the concept of diversity is one that is addressed in the College. These departments operate in parallel with each other but have not always used a cross-curricular approach to teaching with the effect that students are often not familiar with the activities undertaken in other departments. In austerity terms this can prove cost-expensive as resources can be duplicated or indeed under-utilised in some departments, where positions on the teaching hierarchy may determine jockeying for position for scarce resources.

Research Rationale and Aims

The lack of student success experienced in analysing the observations process in early childcare and more importantly in applying the information gleaned in the process to the benefit of the child in question was noted over a number of years. There appeared to be a lack of understanding of the thinking needed to carry out the task required (Freire,

2001). The discrepancy in learning and understanding was initially put down to a lack of capacity of the students for the concept, but this overlooked the possibility that the concept of understanding was being passed over on the part of those charged with the delivery of the topic in the first place or indeed the “risks of understanding” (Gardner, 2004, p.151). It was decided by the department that students should be encouraged to observe the application of some of the theorists in their own learning and to evaluate if that would improve their performance in this very important task for their academic success. It was acknowledged in the CACHE (Council for Awards in Care, Health and Education) department that the problem was not simply a cognitive issue (Smittle, 2003), but an application issue, and that if students were taken on the adventure of critically thinking the concept through they would have more success (Hooks, 2010). In this process it was also important to facilitate the diversity of students in the College and to extend the possibilities that diversity also could signify difference in approach, understanding, concept and design.

In order to understand the motivation for this small-scale qualitative research in the College, it is pertinent to understand that Childcare students learn about educational theorists in early childhood education in a manner that encourages them to observe children and notice which theorists’ ideas might be at play at the time of observation. Observations are carried out regularly on children in a Childcare and educational context in order to identify any developmental, educational or emotional issues that might be affecting a child at a particular time. The identification of any issues arising might impact on the child’s development and their ability to reach their full potential as set out in the UN Convention on the Rights of the Child 1989. Childcare students are required to put that information in context in relation to what the child is actually doing at the time of observation so that they demonstrate an understanding of the theories as part of a FETAC ‘Child Development’ Module and also as part of the CACHE ‘Development from Conception to age 16 years’ Module.

Both of these modules require the students to undertake observations on individual children in the workplace. The student is required as part of the assessment of the

Modules to observe a specific child in context and note if the child is reaching certain milestones of development so that supports can be recommended to assist those children who are observed not to be reaching the expected level of development signified by the milestones for their age. Small discrepancies in development may indicate that some developmental or learning difficulties may be present and these may indicate the need for a full psychological assessment of the child to ascertain what issues need to be addressed. The earlier these issues are addressed the better the outcome for the child usually.

The CACHE module requires more analysis and it tests competency and understanding of application for the future development of the child. It requires the students to explain how they would plan to put changes in place to reach the goals for the child's development. The process therefore involves several steps, which test this competency:

- The actual identification of the theorists and what they have suggested in terms of norms for the age and stage of development of the child being observed.
- A grasp of the concepts the theorist is suggesting.
- An analysis of the best method to carry out a specific observation to prove if the concepts under investigation are being achieved.
- A synopsis of what is actually observed and an interpretation of the observation by the student.
- Suggestions of strategies based on the student's observation to facilitate the child reaching the desired goals.

In itself, this observation process is one of the hardest concepts in childcare, for students to grasp, as it requires them to actually apply theories in an abstract sense and to critically evaluate the application as they see it in the children they observe. Furthermore they need to be open to providing educated suggestions for remedial action for the child in question, where required.

The CACHE Course

Students in the Childcare and Early Childhood Education Department in this college follow several routes to qualification. Childcare Certificate students follow a one-year course to achieve a Further Education and Training Awards Council (FETAC) Level 5 Childcare qualification, which involves three days in college and two days in a selected crèche/Montessori/playgroup facility. Here the students are observed by the placement Supervisor and visited by the Class Tutor. All feedback is included in the competency to achieve the FETAC Award and in this college approximately 40% of Childcare students in the college follow this route.

Another 40% follow a Montessori programme, which includes a FETAC Level 5 Award alongside an American Montessori qualification. 4% follow a Special Child/Special Needs Assistant qualification based around a FETAC Level 5, a further 2.5% study a Childcare Management FETAC Level 6 programme and the final 3.5% are the Council for Awards in Childcare, Health and Education (CACHE) students who form the basis of this small research study. These students follow a part FETAC Level 6 Award along with a British recognised CACHE qualification that has been assessed as being between a Level 5 and a Level 6 qualification on the Irish Qualifications Framework. This qualification, covered over two years, while offering the FETAC Level 6 content, also offers a very professional and child-centered qualification (CACHE Level 3 Diploma in Child Care and Education), which allows successful students to use their qualifications in Ireland and any Commonwealth country.

The level of professionalism which is fostered in the students training is very much practice-focused and students are required to have competencies achieved in their placements and in the classroom, assessed and recorded as part of their training. These Practice Evidence Records ensure that there is a consistency to the students' training whatever placement they are in over the two years. These students experience a variety of placements with more than one crèche experience, primary school block placement and special needs experience over the two years. In all, CACHE students complete over 1000 hours placement training over the two years which is significantly more than any

other group within the Childcare Department. They have more opportunity to observe their learning in context than other students. Additionally they are required by the prescribed CACHE assignments to put this learning in context in a broader sense than required by FETAC assignments. The difference in the two systems is profound and recognised in the childcare industry where CACHE trained students attract more funding for Irish publicly funded crèches as attested by crèches who take students on placement.

The CACHE Department is discussed in this situation as it easily illustrates the difference in teaching and the application of learning. The students in this specific childcare course within the College are taught in some detail about different theorists who have contributed to the body of knowledge about child development and early learning. Piaget, Vygotsky, Bandura and Gardner feature among the early childhood theorists who are taught to the CACHE students in relation to the early learning of children. This small research study is based around twenty three first year students of this CACHE course and their concept of learning the work and putting it into context and the implications of these theorists and Gardner in particular. It is important, before making any claims on the success of this process, to acknowledge that students who were identified as having special educational needs, received support in relation to the needs identified. However the problem appeared to transcend the support structures in existence.

Scholarship of Teaching and Learning

Bearing in mind that the diversity, already outlined, which forms part of this College is learning-centred from both a student perspective and from a departmental point of view. It is also teaching-fuelled by reason of the second level background of some of the teaching staff mixed with the Further Education focus, occasioned by the current Further Education status of the College. In such a College, therefore, it can be expected that teachers would make use of students' interests and background knowledge in relation to material and the teaching of skills for independent living (McCombs, 1991). It is not surprising that an enquiring attitude regarding the process of teaching and learning (Bernstein, 2010) would be part of any approach to a full commitment and engagement

with students' learning outcomes, success and progression. Not surprisingly judgment “comes into play at precisely those points where the common sense guidelines are unclear and the criteria open to multiple interpretation” (Nixon, 2004 p.5).

In embracing this approach it was inevitable that the Scholarship of Teaching and Learning (SoTL) would inform the next step in the process. Ernest Boyer, seen as the father of the SoTL, in his writings sought to engage the concept of investigation and extension of the process of education as a result of which he identified four distinct Scholarships. These were: discovery (that of wanting to know and investigate), integration (that of bringing new meaning to existing work), application or later called engagement (the putting new knowledge into use for the benefit of others) and teaching (inspiring and keeping “the flame of scholarship alive”) (Boyer, 1990, p.24). The identity of research as scholarship was described as the process of adding new knowledge through enquiry and investigation (Boyer, 1990). Later scholarship was defined as having three distinct components; being public, open to critical review and open to use by others in the field (Schulman, 1998).

For the College discussed, these components were part of the approach of the teaching staff to their own identified diversities as outlined above. The fact that the component parts of Schulman's criteria of identification, sharing and implementation (Schulman, 1998) had already been experienced in the College, in the transition for many teachers from secondary to further education, may well have encouraged an ongoing embracing of such concepts in the College in general. The College allows for experimentation and implementation in order to solve problems that are identified. It also facilitates collegial discussions among staff, which are embraced as a sort of informal professional development process. The outcome is that there is openness to enquiry in the college, which facilitates small-scale research like that undertaken in the Childcare Department when a problem is recognised.

The teaching team discussed the concept of student diversity and how best to encourage a sense of investigation in the students. The fact that this particular childcare course was of two years duration allowed time for wonderment which might not otherwise have been possible in a one-year three semester scenario. Gardner's Multiple Intelligence Theories espoused at least eight criteria for what "counts" as an intelligence (Gardner, 2006, p.67) claiming that we all possess these eight intelligences in the same proportion mainly "due to accidents of hereditary, environment and their interactions" (Gardner, 2006, p.67) He gave labels to the intelligences he identified and this appears to be an ongoing process as it now includes a newer labeled one:

Linguistic

Mathematical

Musical

Spatial

Interpersonal

Intrapersonal

Bodily kinesthetic

Naturalist,

and one being advanced as spiritual in nature.

(Gardner, 2006)

Not a simple introduction by any means to a concept, which has intrigued educationalists since Gardner first, introduced his theories and which he has added to in the meantime with further intelligences (Gardner, 2006). Perhaps a reason for this depth of interest in the concept of other forms of intelligence in society is a desire to prove that, what we actually value as intelligence has a measurable quality with which we can work, although Gardner himself does not deal with measurability. Whether such emphasis on measurement is about a concentration on learning or intelligence is an ongoing development but in any discussion on learning and teaching in Further Education, the concept of different learning is paramount. Just as the student body is a diverse one, so also are the ways in which students learn (Ellis & Allen, 2010). More importantly, recognising the way a student learns, opens up possibilities for that student which can be

life-changing, particularly if students are expected to play their part in their own learning (Ellis & Allen, 2010).

As the College already has a can-do attitude in relation to teaching, it was decided that the student learning should be the focus of enquiry. Gardner has not actually definitively addressed how his groundbreaking work should be implemented, allowing the interpretation work to be done by others over the years, a strategy he appears to have repeated in *Five Minds for the Future* (Gardner, 2006), and which Willingham seeks to explain away by saying that in fact Gardner is firstly a psychologist rather than an educator (Willingham, 2009). Gardner had however written about early years childcare (Gardner, 2004) and solving the identified problem became the focus for teachers in the Childcare department who were prompted by the economic realities of education in 21st Century Ireland. Retention, progression and student experiences as consumers are the drivers of demand and thus funding and resource allocation for colleges. The College is not overtly driven by a product focused stance (Whitely & Keith-Speigel, 2001) but economic realities form an inevitable motivator, if not driver, in 2011-Ireland and indeed it would appear from austerity measures in Europe in 2011 that a balanced approach is needed despite the criticisms of Whitely & Keith-Speigel.

Research Methodology and Methods

Action Research

Action research is effectively applied research where the researcher tends to set the research in the researcher's own working environment and to focus on 'the need to make improvements to that environment through rigorous research' (Denscombe, 2002, p.27). It is a type of research which is useful to bring about change at a local level (Cohen, Mannion & Morrison, 2007) and is very much focused on planning a process of improvement (Kemmis & Mc Taggart, 1992). This form of research which starts with small cycles of planning, acting, observing and reflecting which help to define issues (Cohen, Mannion, & Morrison, 2007). This particular small-scale single cycle action research was not initially aimed at change, but was directed towards observation of the

conceptual learning problem identified and was undertaken with this goal in mind as a process of enquiry by the teaching team.

In the Childcare department, staff questioned the effectiveness of a bank of teaching material held by the teacher in the form of a collection or kit as a type of toolbox for Childcare students who already had a constructivist approach to their training from an assessment point of view. This bank consisted of PowerPoint Presentations, Videos, handouts, library textbooks and sample work. Work placements, practical assessment, reflective practice and professional development diaries as a scaffolding of learning, were already a part of the syllabus for the students in the department and while some students performed very well in these activities others did not.

The first step in this small-scale action research started at individual tutorials (held twice yearly), where students were asked to identify any problems they encountered on the course. 70% (16) of this particular class of students acknowledged that they had difficulties with application of their learning in assessments and struggled to assimilate the course content rather than the application evident in their work practice. It appeared that they were familiar with the requirements of the learning, but not of the application explanations needed in assignments and 56% (13) felt they were 'missing something'. Students and teachers were motivated by enquiry to investigate if other approaches could be more effective. It was felt that students would eventually understand the topic but the students stated that the process of learning the rules, was delaying that process. What appeared to be the problem then, was not what they had to learn, but how to go about doing so and this was confirmed with the students in a group discussion.

Students explained in conversations that there was so much to Gardner's theories and the concept was not so easily visible in the children they were working with and this caused difficulties for them. They confirmed that in the work placements they could easily apply Bandura's theories and could relate to the need to be a good role model in their workplaces. They could identify zones of proximal learning as espoused by Vygotsky and could easily relate to the processes of conditioning as discussed by Piaget in which

case teachers were convinced that the issue was about learning to apply the concepts and make evaluations based on their learning. This led to an investigation as to how each student felt they would best learn something.

Teachers in this department had always employed an AVK (Auditory, Visual and Kinesthetic) approach to teaching, where materials were presented in all three forms but now in relation to the most challenging and fundamental skills set, this did not appear to meet every student's needs. It was decided that an investigation into other forms of presenting material might serve to confuse more than instruct. The department felt that Gardner's theories of intelligence while confusing for students to learn to apply, was a good starting place. It might also be used to help individual struggling students to address their own intelligences. Also, since these theories were already on the module outline for the observation processes, the students were asked to use them in their assignments.

Secondly students were given a detailed outline of Gardner's Theories of Intelligence in class and asked to present a synopsis of these theories in written format or in a format in which they were comfortable presenting material at the next class session. Interestingly all 23 students who took part in this activity chose to write the synopsis. They all tended to relate the theories exactly as they were reading in books with over 90% (21) opting for this, rather than trying to relate them in terms of examples they had seen in placement, further emphasizing an apparent inability to identify how the theories could apply in everyday situations.

Thirdly students were asked to identify how they felt they learned in their own lives. Initially students referred to the VAK methods they were familiar with and which took little thinking about, as it was visible every day in the way teachers presented material. Moreover, this discussion extended the students' knowledge of the SoTL issues, as they had to acknowledge that while they thought they learnt that way, it was not necessarily the way they learnt to understand and apply. If it was only about learning, then there was no explanation for the fact that many of them could not master the skill of effective observations.

Next students were asked to talk about what they understood about the concept of multiple intelligences and this produced surprising results for some students, as they were often unaware that their own methods of learning were actually visible to teachers who observed them in class and were aware, from discussions, of their individual interests. The discussion of this process surprised students but served to illustrate the significance and effectiveness of observations when done properly. This led to further identification of possible uses of the criteria that counts as an intelligence, identified by Gardner (linguistic, mathematical, musical, spatial, interpersonal, intrapersonal, bodily kinesthetic, naturalist, and one lately being advanced as spiritual in nature).

Finally students were asked how, if they had their choice of methods, they would like material presented to them in class. This really got students more focused on different methods to portray material and brought them out of the familiar VAK zone. They suggested materials, which would work better for them such as posters, projects, raps, songs, poems, mnemonics and other learning methods, and it was decided to investigate how some of these would work for each student. They negotiated with each other and came up with many suggestions, which would work for them and in the process actually grouped themselves into intelligences which they recognised as those which were being presented as Gardner's groupings.

The diversity of the College again became obvious in the approach taken to the investigation being proposed and the concept of cross-curricular involvement was considered as being cross-department. The fact that the College has such a collection of diverse departments presented its own opportunities, which continue to be explored. Students are encouraged to create their own learning materials, which they have control over, but which they also share with teachers so that they can be added to the teachers' resources.

Material is, for the most part, still presented in the same ways as it was before this initiative was started, but now, students are encouraged to embrace different ways of interpreting the information which best facilitates what they identify as their dominant

intelligence at the time of learning. Some students have chosen to create their own posters (as part of their Art in Childcare module) in order to illustrate individual concepts they want to understand or simplify, others use musical methods to assist their own learning using college musical instruments and media, when available. Even more students relate in groups and assist each other (interpersonal and intrapersonal) to gain understanding and learning or re-learning of material that was previously dismissed as impossible to learn. Proclivities are embraced and potentials created in the process.

The following September saw the involvement of the Performance Department in the writing and performing of material, which assisted a Gardner approach to rules and regulations. Some students remembered rules outlined in this manner, quicker than the reading and explanation of the same rules in the classroom. The process of negotiating with the Performance Department also ensured that the Performance students involved could use the process as an assignment, on which they could be marked as part of their qualification. There was a cost-effective payback for each Department and effectiveness to the process. Where once the work of the teacher was to impart information in understandable ways, students now create personal material they could reuse and appear to have found a key to their own learning.

Students were asked for their views on the process and its effects as follows:

Q		Very Much	Slightly More	Slightly Less	Definitely Not
1	Did you know what way your learnt best before this research?			2	21
2	Did you know and understand Gardner's Theories of Intelligence before this research?		7		16
3	Were you able to put Gardner's Theories of Intelligence into effect with children in your work placement before this research?			3	20
4	Do you feel confident that you can apply	12	11		

	Gardner's Theories of Intelligence now?				
5	Did this research assist you in learning observation methods and their application?	7	16		

Table 1: Students' evaluation of the examination of Gardner's Theories of Intelligence

Students continue to discuss the impact this approach had on their learning and understanding and it is interesting to note some of the comments recorded;

I can't believe that I can now grasp some of the stuff we have had to learn the hard way and can now put it into practice for myself. I wish I knew this all the way through school and then I wouldn't have felt so thick. But then again I wouldn't have ended up here if that was the case.

Its brilliant and I never knew I learnt things that way. I remember exactly what was said because it was put in a joke and fun way and I remember stuff better then.

The material created can be changed and modified to be re-produced in assessment format thus enabling students to grasp hitherto difficult concepts and put them into perspective. Importantly, this additional work is not seen as a chore by students, but rather as a challenge to self-identify (Wambach, Brothen, & Dikel, 2000). Interestingly, in the process students have expressed a sense of ownership of the college experience and a challenge that they can apply in their work settings. While once students struggled to relate to different intelligences, they now facilitate different types of learning in themselves and others. This is very significant in a childcare setting where workers are charged with ensuring the children they work with fulfil the goals of the United Nations Convention on the Rights of the Child to ensure that every child reaches their best potential. In their observations process students understand the concept that there is not a limit to the solutions they can offer in relation to a need observed, and now understand the process as a facilitation tool in the lives of children.

Conclusion

What started as a challenge to address what appeared to be a problem from a teaching perspective turned into a learner enabling solution that allowed students to take charge of

their individual challenges in a collegially inclusive manner. In terms of Scholarship of Teaching and Learning, it is felt that the College is meeting the criteria of Shulman, as what is being achieved in the College is public. Since there is a cross-departmental engagement, it is open to critical review in the College and departments can opt in or out. This may be facilitated by the diversity of the College outlined from both teacher and learner perspective, but more importantly the initiative is open to be used by others in the College (Schulman, 1998).

The exercise has resulted in students changing the way they approach their learning and challenging themselves to make material useful in the way they want to implement it. Students realise that they overlooked their own learning intelligences before and this has opened up opportunities for them in terms of progression. From a College point of view no additional expenses are incurred as the resources of the College departments are used efficiently and effectively. Additionally, the activity undertaken by the Performance Department facilitated an assessment criterion for the Performance students, allowing both the teacher and learner in the situation to get a 'return on investment'. Interestingly other departments have opened up discussions on the work involved and are investigating the possibility of extending the concept by exploring alternative methods of presenting material that would appeal to varied intelligences. Students who took part in the process feel they have opened up their own potentials and the excitement they express in the learning process is invigorating for the whole teaching staff.

It is at those moments in human history when individuals or groups confront what has been thought to be a limit or a constrain – a fear of falling off the end of the earth, a belief that each species is sacrosanct, a conviction that parallel lines never meet – and cast it aside that horizons open up, or perhaps that they are altogether redesigned or defined (Gardner, 2004, p. 263).

There may have been factors which facilitated the positive results experienced such as the fact that the two year course allowed students to grasp the concepts and there definitely was an excitement which was palpable in the students when some realised that they could change their chances of success. There may even have been a group dynamic (which was not investigated in this small scale study), which allowed for some of the success and this will be further tested with other groups in the College. Teachers who have engaged in

the extension of the initiative may not have the same motivations as the particular department involved in this study but the concept of testing, while possible in this particular College because of its own diversity, is open to other departments and a slow-burn approach may well filter out any bias on the part of the childcare department. It might produce results that are “so interesting, so varied, so complex and so novel as to occasion a rapid progress of thought” (Dewey, 1991, p.71).

The success of this small-scale research has ensured that the Childcare students involved in the research recently graduated with a great awareness that being open to different ways of learning can have positive effects on the ability of students to learn. The positives of actually making a student aware of their best form of learning has led in the case of these students, to less call on the learning support structures, less repetition in class and a greater sense of efficacy. They also display the ability to apply the observation techniques and other material in the best interests of the children in their care.

This initiative could have the potential to efficiently direct the delivery of scarce learning support in a college-wide context. Departments can work in tandem with different module assessment criteria to allow a flexible approach which may have the potential to be applied across the college. It is however imperative in such a scenario that there is a spirit of co-operation in a college for this to happen across disciplines and that the students understand and acknowledge their own accomplishments in the process.

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