Team learning in a undergraduate setting in Croatia

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TEAM LEARNING IN A UNDERGRADUATE SETTING IN CROATIA

by

Marvin Deitz

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Abstract

This study focused on team learning at an undergraduate school environment. The researcher focused on a city in Croatia called Dubrovnik. The school is American College and consists of English speaking students that are composed of mostly Croatian descent. These students are Hospitality and Tourism majors and are eventually going to help the tourism economy after they graduate. This research contrasted student’s performance in one individual lesson plan in two different classes. One class is presented the material through the traditional lecture and the other class is presented the material through teams and collaborative learning. The two classes were given a pre-test and a post-test. These studies focused on results on the tests and are analyzed. The researcher hypothesizes that there will be an increase in the post-test scores in the team learning class that is higher than the traditional learning class. This is assuming that the pre-test scores in both classes are the same. The review of literature focused on information found on the subject of team learning and the benefits that students and teachers acquire from this way of learning.
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"We are not playing as a team". This is common statement you may often hear in many sport team locker rooms. In team sports a team that doesn't function as a cohesive unit with a common vision and purpose, will not succeed. Look at the Chicago Bulls, granted they might have the best player in the world, Michael Jordan, however, if each individual did not perform their role; they would be like any other team.

The concept of teams can be related to most activities and is particularly apparent in the business world. Businesses, by their very nature are a diverse group of individuals who bring their own strengths and weaknesses. Businesses try to rely on individual strengths to form an effective team. All job functions are vital in satisfying a purpose or vision. Obviously not all businesses use the team concept but many of them attempt to. The big question is are our colleges preparing the students for this type of atmosphere?
The apparent way for our colleges to prepare students for a team environment is expose students to working in teams to learn the material in the classroom. This is referred to as "team learning". Many colleges have embraced this way of learning as an alternative to traditional learning.

Empowering the students to work collaboratively, and encourage interaction among them, has helped students to learn the material more efficiently. This also enable the student to practice their team building skills which in turn will help them in the business world.

This study wills micro a school in Croatia in the city of Dubrovnik and looks at the direct effect of team learning versus traditional teaching.

BACKGROUND
Traditionally, many undergraduate programs have used a singular to approach to student learning. The student would enroll in a program and most would be very apprehensive about entering their program. The thought of competing and performing on an individual basis often would make students very nervous about attending their program.
In a traditional classroom the professor would stand at a podium with twenty to one hundred students, and just lecture while students scramble to take notes. There would often not be many students to student and student to teacher interaction. Some classes could have a team project, which allows the students, at least a measure of interaction. Most often in these college teams there would be a few students who would execute most of the work with some students not pulling their workload.

This study focuses on the European country of Croatia. Dubrovnik has been a great tourist attraction for many years especially for many Europeans. It is located on the Adriatic Sea, having a very medieval look and possesses much history of culture and art. Since the end of the Bosnia war (1994), Croatia has been trying to build their reputation back up as great tourist and vacation area that they had prior to the war. The government of Croatia has teamed up with Rochester Institute of Technology to create a college that will train the future leaders in the hospitality and tourism industry. This college is American College of Technology. The college has been in existence since 1997. As enrollment increases, many of the students
are attending because they value an American education. The European colleges are very traditional, and do not have a great reputation as educators compared to an American staffed college. This study focuses on the results of a Principle of Food Management class. Two classes will be taught differently, one lecture and the other collaboratively as a team.

THE PROBLEM

What is the impact of teams learning on under-graduates and how does this compare to a lecture format? This study will examine hard data (test scores) and compare and contrast results from these two diverse methods of learning. The variables in this study that will be scrutinized are straight lecture and the interaction of a team to learn material and its direct correlation on posttest scores.

PURPOSE

This study will analyze the gaps between team learning and traditional learning in two select classrooms at American College of Management and Technology. This study will look at test results from two identical classes taught completely different.
SIGNIFICANCE
This study should provide educators with data to prove those exposing students to teams and a more collaborative methods can help students better learn material. This can help prepare students in working together as a team in industry.

METHODOLOGY
This study will look at the direct effect of team and collaborative learning by way of testing of students to measure how much they have learned. The researcher will have two groups of students taking the same course. The course is Principle of Food Management, which is a two-hour course twice a week. This study will focus on 1 two-hour class. The class subject is stocks and sauces. Group 1 (control group) will be provided the instructional method of traditional teaching. It will focus on lecture with limited interaction and discussion. The instructor will hand out an outline of the material to be covered and will give a straight lecture. Group 2 (experimental group) will be handed out an outline of the material and be divided into teams. The instructor will assign a team leader and give them the responsibility to facilitate the team to
learn the material. The goal is to have class be interactive and collaborative. In the classes of both of these groups, there will be a pretest, which will consist of ten multiple-choice questions. There will be a posttest that will not be announced to the students in both classes. Averages will be taken for each class, for the pretest and the posttest. An analysis will be done on the data collected to evaluate the different methods of teaching and their relation with test results as they are compared to each other.

HYPOTHESIS
It is expected that its study will demonstrate that students will learn more in a team environment than in a traditional manner. As a result of the research, college classrooms may see the need to adopt more collaborative team learning as a primary method of teaching students.

DEFINITION OF TERMS

**COLLABORATIVE LEARNING:** Learning by interacting and sharing ideas with colleagues.

**EDUCATORS:** Those people who teach at a college level.
**EMPOWERMENT:** Allowing students the freedom and encouragement to do something.

**HIGH PERFORMANCE TEAMS:** A team that produces high results and successfully meets the needs of the task and the needs of the individuals.

**TEAM:** Individuals that make up a group to complete a task.

**TRADITIONAL LEARNING:** This term refers to lectures by a teacher, note taking by the student, and not many interactions between the teacher and the students.

**ASSUMPTIONS:**

**Ideological Assumptions:** An important assumption of this study is that: there are college professors currently using teams in their classrooms and that there are many successes with students learning from this method. It is assumed that team learning is more productive than the traditional way of learning. Previous involvement in each program by the researcher does provide him with a level of understanding on both approaches; team and traditional.

**Procedural Assumptions:** To control the bias that may be present, the researcher is using multiple questions on both the pre-test and the post test. The data collected will be averaged and then analyzed.
SCOPE AND LIMITATION:
The focus of this study will be on two particular classrooms in a European country. The area is Dubrovnik, a city in Croatia where students are eager for an American education. This study will focus on these students who have only been exposed to very structured classrooms and not any type of team and collaborative learning. This study will examine the direct reaction on learning through a test, in both of these classroom situations. Existing educational team research to determine if the team method is successful and widespread will also support the study.

PROCEDURES:
The subjects that will be examined in this study will be students who have lived in Croatia all of their life. The students will be given ten questions that are multiple choice. This test will be given at the beginning of the class without any warning. This will take place in the team leaning class and the lecture class. The material will be given to the students by way of lecture in the traditional learning class. The team learning class will break into teams and discuss the material. There will be two work sheets that the students will work on individually
in the lecture class. The team learning class will work on the work sheets as a team. There will be a post-test in both classes at the end of class which is when the classes finish the work sheets.

LONG RANGE CONSEQUENCES

Should the findings of this study be in accordance with hypothesis, the data will suggest that the use of teams and collaborative learning in a classroom environment, will be a standard throughout the education world. Should the findings be equivocal or the result not supports the hypothesis, further study would be advised.
CHAPTER II.

REVIEW OF LITERATURE

The review of the literature in the area of team learning seems to center around a few key issues. These issues fall under five main categories. These subjects are critical thinking, cooperative learning, and collaborative learning, gaps between colleges and the business world and empowered teams. Many of the writers state that we are not preparing our students for the business world. We are in a global economy with incredible technological advances, yet our educational systems at the college level is continuing to present material the same way it has for 25 years (Lenchow, 1998).

Many of the experts state that college institutions need to make a paradigm shift with their view on learning. There is research I will discuss that indicates that students increase learning and develop many important skills through team and collaborative learning. These skills are vital to the success of the student once they enter the work force. These are skills that companies have stated that will fill
the gap between colleges and businesses and produce excellent employees. The research shows that test scores have increased and the students have stated through questionnaire, that they learn more through being interactive on a team than the traditional way of learning via lecture. I am going to discuss some of the research that indicate that team learning could be the wave of the future and that colleges need to take a careful look at changing their roles as educators to meet the needs of the students and companies seeking college graduates.

**Critical thinking**

Current literature shows that most college classrooms do not provide opportunities for students to work collaboratively on projects or assignments and limits dialog between students. Many of the classes are lacking any activities of small groups that could plan, set goals, and solve problems. This is imperative for the development of students as an adult in the real world. There is a term called critical thinking in which one of the researchers feels is a vital skill that is developed through collaborative learning (Garside, 1996). Most recently, Ennis (1991) defines critical thinking as “reasonable reflective thinking that is focused on deciding what to
believe or do.” It includes such acts as “formulating hypothesis, alternative ways of viewing a problem, questions, possible solutions, and plans for investigating something” (pp.1-2). This idea of critical thinking can only be accomplished through creating an environment in the classroom in which students become active participants with encouraged emotional engagement in the material being presented. Students must take responsibility for their own learning. Critical thinking forces the student to formulate ideas, opinions, beliefs, and defend their position on a particular subject. This does not happen in a traditional classroom setting especially classrooms that do not encourage any collaborative activities. In a typical college classroom setting most students will sit there passively and decide when they want to learn and formulate their own form of critical thinking. If there is interaction between students, students are apt to take risks on formulating their own ideas and opinions and become less afraid to challenge other ideas they encounter.

If this happens in the classroom than students become active learners and not passive recipients of information that traditional lecturing might produce. This entire process of collaborative activities creates critical
thinkers and seems to develop students as mature students as an individual.

Verbal interaction has always been a way that people learn and develop intellectually. Through interaction with others, people begin to construct how they view the world and in turn raise their intellect to a higher level. Research shows that difficult material can be learned much quicker if the learner verbalizes the material. There is a well-known theory that the more senses that people utilize, the easier that learning becomes. Discussion will help students learn quicker and also develop critical thinking because students can compare their thinking to other students which creates an active participant of the individual in the learning process.

**Cooperative learning**

In the review of the literature, cooperative learning is defined as “any classroom learning situation in which students of all levels of performance work together in groups toward a common goal” (Garside, 1996). In cooperative learning students group together and work toward a common goal. In this process students can accomplish high level tasks as a team which they would
struggle with on an individual basis. This can increase a student’s confidence. Research indicates that there are numerous benefits from cooperative learning. Cooperative learning gives the students a chance to learn from each other through dialog. When this occurs there is an exchange of information and ideas. Studies show that the students who are involved in this exchange of information are the individuals who benefit the most in the learning process. They become active participants as opposed as passive recipients of teacher delivered knowledge. The second benefit of cooperative learning is the information that is discussed is retained more effectively in the memory of the student. This occurs because the student is verbalizing the information. This is stated in research by Bane (1925) that indicates group discussions are more effective than lecture in immediate recall of information. In cooperative learning the strategies focuses on oral repetition of information which includes explaining, integrating, and providing rationales, which in turn increases long-term retention of information. The third benefit of cooperative learning is that it encourages the student to form their own opinions and they are able to test their opinions and ideas in these group discussions. They are able to see the reactions of other students to
their ideas. The fourth benefit of cooperative learning that the review of the literature highlights the enhancement of achievement in the classroom. Slavin (1987) shows through 63 studies on cooperative leaning techniques in the classroom, that 57 percent shows a significant increase in performance in the classroom and 41 percent showed no real increase in performance in the classroom.

Teachers who employ cooperative learning activities are increasing learning in students because of the interaction process between students which helps the students process the information which increases the long term retention level of the individual. These teachers are also altering the student’s attitude towards learning and creating active participants in the learning process. This process is also promoting better interpersonal relations among students. In conclusion too cooperative learning is that it effects the development of the student’s critical thinking skills.

Further research shows many colleges at an under graduate level utilizing team learning where the students have much responsibility in the learning process. One particular study showed positive results in the area of chemistry (Dinan, Frydrychowski 1995). This study used small groups
and student-centered learning methods as an effective learning tool in teaching the difficult material of chemistry. This subject matter because of its sometimes-complex material has driven students away from the classrooms especially the classrooms that are teaching the traditional methods of lecturing. This study has show an increase in learning skills, decreased dropout rates, reduced gender and racial bias and the retention of non-traditional students. In this study students decide as a group and individually the weights of their grading schemes that is composed of three components: group, individual and peer evaluation grades. This activity is a team builder and importantly makes the student an active participant in the learning process. The students feel they have a real voice in the fairness and the equity of the courses operation. The students feel empowered which takes some of the pressure they might be feeling at the beginning of the semester. This study lasted a semester long and proved to be very successful. There were many observations and conclusions made after the semester was over that are consistent with much of the research on this topic. Once teams are operating in the classroom students tended to police themselves especially in the areas of attendance, preparation and handling of discipline problems. Working
in-groups reduced alienation among students and provided a support system for students that are struggling academically and personally. This happens automatically.

Many friendships among very diverse backgrounds developed among the groups in these classes. Many of the students realized that good personal relationships and communication skills are essential to the success of the group and as an individual. This study seem very successful with minority students and the results at the end of the semester indicated that four out of the five minority students received grades of a B and above.

This experience of teaching chemistry through team learning in small groups was found very rewarding to the teacher. Instructors enjoyed many positive reactions to this way of teaching. Regular attendance increased as student’s enthusiasm towards the class was on the rise. Many students were arriving to class early eager to get the days activities going. Student’s behavior became more professional and they were responsible for their own learning. Discussions among the groups in class with increased intensity covering the days learning guide was a real treat to the instructor. This is a behavior that
teachers were not used to experiencing in this program. Students tended to prepare more for classes, which was rare prior to these activities. The teachers were also pleasantly surprised that academic performances were improved as the groups came to know each other. Gender and ethnic stereotypes were greatly diminished in the groups and student performances increased as a mutual support community grows as the semester continues. This is all consistent with the literature that exists on team learning. Much of the literature focuses on the effects of the students, however, these documented effects on the teachers is very positive and can increase the morale. This in essence can rejuvenate the instructor and move many of them away from traditional teaching in creating a learning environment for their students. These methods can also bring out the creativity that is lacking in many teachers who need to make the paradigm shift. There is documented results of this study that is the quantitative in nature created by questionnaire that was given to the students (Dinan, Frydrychowski 1995)

The results are as documented;
• 97% of the students felt that team learning built better relationships among students than the traditional lecture method.

• 84% of the students thought that team learning was an effective way to learn organic chemistry.

• 79% of the class felt that team learning was harder work than the lecture method.

• 90% of the class felt responsible to their team to be totally prepared for each class.

• 90% of the students felt a responsibility to be present at each class.

• Only 18% of the class felt that lecture method is a more effective tool to learn the material than team learning.

These are tremendous results when the students have input on how they view learning in a classroom situation. All college institutions should take more questionnaires as a method to really find out how students view the learning in the classroom.
Collaborative learning

The review of the literature also focuses on the team experience that students gain from collaborative learning. Many students are not accustomed to working in teams at an undergraduate level. This experience will give a student exposure to the team concept and team dynamics. Students will get an understanding of how well w group and utilize their resources in solving large and difficult problems. They will encounter conflicts along the way and will gain experience in resolving these conflicts as a team and learn that conflicts are not always negative.

Further research has strengthened the position of cooperative learning and student empowerment as an effective tool in an undergraduate environment. There is an interesting study on algebra students in Connecticut and Ohio that has shown favorable results in this area (Odafe, 1998). In this study many trade organizations in that evaluate standards for school mathematics have called for changes in the teaching and learning of mathematics. Such organizations have called for reform in this area due to predictable outcomes such as fear, anxiety, apathy and a lack of interest in these subjects. They have called for students to be become more responsible for their learning
through cooperative learning techniques and increased interaction in solving complicated tasks. The organization that has called for these changes in the areas of mathematics is the NCMT, which has brought to the forefront Curriculum and Evaluation Standards for School Mathematics (1989). Listed in these standards they have called for students to be involved on the process of generating and solving their own problems. This involves empowerment and instructors need to learn to let go. This will make students active participants in their own learning. As quoted by (Odafe, 1998) "A rationale for encouraging students to contribute to test items is that survival in the real world essentially involves a continuous process of problem posing, decision making, and problem solving for which students should be prepared". In this study the teacher announced that the class was going to help write the questions in the exams and they reacted in total shock. This research done in colleges Connecticut and Ohio showed that entering into cooperative learning groups without prior discussion is not recommended. Empowerment and team learning is a large paradigm shift and could create a culture shock if there is no preparation for the transition. The cooperative learning skills that should be discussed include listening, involve all members of the
group, engaging in productive controversies, giving help but not giving the answers, avoiding yes or no questions.

This study produced guidelines that the groups must follow during their activities in producing questions for these tests. These guidelines are also excellent resources for a successful team to operate. They are as follows:

1) Generate all problems from beginning to end together and not individually.
2) Everyone in the group must contribute.
3) It is the responsibility that everyone in the group understands the generated problems.
4) The responsibility of group members should be rotated from time to time.
5) Group members should not ask the teacher a question unless the answer can answered by the group.

The researcher of this thesis feels that these are important guidelines that teams in the classroom must have before starting any type of collaborative learning. Most students are not exposed to team learning and need to have some guidance before they start such an activity. This study proved to be very successful especially in the eyes of the students. The results were very similar in both
studies. There was a questionnaire given to the students and some concrete quantitative data produced some positive results. 95.6% answered yes to the question of “Did you like contributing items to your test.” The students that answered yes had to give three reasons why they liked contributing. Here are some of the responses:

- It made them feel important
- They felt more a part of the class.
- They knew what to study for.
- They studied harder because they knew people were going to put hard questions on the test.
- It was a learning tool.
- They learned the material more thoroughly because they knew what the question was going to be.
- It gave them a chance to share some knowledge and an opportunity to work together.
- They felt a part of the process.
- They had a good feeling after taking this type of test.
- It helped create interest throughout the chapter because they would be looking for possible questions.
- Helping prepare the questions forces them to study and they feel more relaxed prior to the test.
Allowing students to furnish information on these tests motivated them to learn and to take ownership of their own learning. The students became more interested in the appearance of the test. This team-based activity gave the students an opportunity to share their knowledge and learn from one another. Through this empowering experience, this activity made it fun to learn and enabled the students to use their creativity. Having the students participate in this cooperative learning process changes their misconceptions of mathematics and as learners. It also increased self-esteem and interest in the subject and created active learners. This activity changed the student’s paradigm on learning in the future.

Some problems might arise in instituting this type of activity. In team learning such as this particular study, the teacher must be able to let go of some of the responsibility of the class. Some teachers might have problems doing so. Instructors can’t assume that the students all know how to proceed with this type of activity. They have to be an active facilitator and help guide the class, which takes a paradigm shift for the teacher. Some students might also not be willing to be thinkers and active participants in this process.
In conclusion on this study of algebra students, students and teachers benefit in this team-based activity of creating test questions. The teacher encourages the student teams on the material they want the students to concentrate on. The teachers received much satisfaction in seeing the excitement, involvement, and a new found enthusiasm on their subject. This activity is a big change from the traditional lectures that the teachers are used to in the past. This also brings out the creativity that teachers do not get a chance to display. This particular author believes that students are generally afraid of tests and perform below their capabilities because students are not responsible for their learning. Students want to be a part of the learning process and they want to take ownership of their own learning. This activity teaches students how to be apart of a team and solve problems collaboratively. Most of the students do not have experience being on a team in the world of academics. This will benefit the students when they are out in the business world. Students also claim that contributing information to the tests helps them learn the important facts, concepts, and skills of the material of that particular subject. They also reflect on the design of the questions
that help them reflect on their own learning process. This helps them to decipher what they want and need to learn.

**Gaps between colleges and the business world and empowered teams**

A review of literature shows one study that combines the collaboration of industry, universities and colleges, and industry and technology and large piloted projects to promote team-based learning (Lenschow, 1998). Lenschow states in his study, in a global economy and increased competition, great attention in industry is on learning in a practical manner from learning institutions. The paradigm shift has to be made for learning institutions to move from deciding what and how students need to learn to listen to society and businesses. Professors who have been teaching for many years need to adapt to the information age and the global economy and listen to what the needs are for businesses. These changes have to be integrated immediately into the college systems. More and more businesses are creating a learning environment for their employees. These environments are becoming team-based and many collaborative activities are taking the place of individual performances. Colleges need to get on the bandwagon. There is an interesting quote that Lenschow makes
in his study. He states “one can find teachers teaching the same subject in the same way for 25 years, making and grading exams with success, while a company goes bankrupt because it failed to acquire the needed, current knowledge to be competitive. There are organizations that have created a learning environment and strategic learning and it is not considered their main business like it is for school systems. Colleges need to create this environment and meet the needs of industry and better prepare the students for the real world.

Interviews at Stanford for this study shows that students learned least from lecture and more from each other. Stanford created problem based learning (PBL) classes which did away with lecturing except for support lectures, and student teams were created for students to find their way to skill and knowledge in a learning environment. These classes encouraged creativity and initiative. These classes are divided up into teams and the teams can decide which project they want to work on. Industry and the University create the projects that are real problems that the businesses are facing. The students learn the advantages of being apart of a team. They have to learn how to work together. Each team member plays a role and is
designated specific duties, which require them to acquire knowledge on that function. It is vital that the teams work together and share their knowledge and learn from each other in order for the project to be completed. A learning environment is created with assigned computers that have e-mail and Internet access for each team. Web technology is a big part of the learning environment. The students work and report on the web, teachers also present the projects on the web.

Most of the students involved in the PBL program feel very positively about team learning. Comments from the students seem to suggest they are more motivated than traditional classes. Student’s claim that they were very frustrated at the beginning because they are used to being told what to do step by step. As the course continues, the students realize that the situation allows them the freedom to act and create. This is a program that allows the student the opportunity to experience the real world working on a practical project. These classes created a simulated work environment where a team is created to tackle a project and the team has to work together closely to complete it.
In reviewing the literature focus was on changing the college structure to meet the demands of businesses. The study done by Johnson, Srinivasan and Kemelgor; (1998) examines the structure of business schools through an empirical study of business school deans. This study shows that most deans of these business schools envision a transformation from a traditional way of learning to an increasingly open, dynamic, flexible, customized, collaborative and proactive in the future. The deans view an important role of empowered teams in the classrooms that is supported by the faculty.

This study suggests that with the new millennium approaching, U.S. business educators need to be more responsive to the needs in the growing competitive educational market place. Mason (1992) noted that there is much competition between business schools and these schools must respond to student needs and create a high performing business school that is departmentalized and is always trying to continue to improve itself.

This study focuses on the structure of business organization that is going through some revolutionary changes to keep up with the global economy. A new model of
the prototype organization is developing for the 21st century. Recent trends in a highly competitive world market such as flattened organizational structure, downsizing has led business schools focus on the need for a radical change. A new model of the ideal business of the 21st century has developed through the consensus of the experts to be flat, flexible, team based, networked with customer and suppliers, quality focused, and global (Anacona et al., 1995; Farkas & DeBacker, 1996).

With this new model in mind, business schools are being asked by organizations to develop managers who can work in a team based, more closely linked to suppliers and customers, flatter, more responsive to change, more diverse in their workforce composition, and more effective in operating in an increasingly global economy (Anacona et al., 1995). Companies want students who have interpersonal skills and are experienced in working in teams to help their company work towards the envisioned model. This experience must come from these business schools. This study looked to see if in fact those business schools are moving to the direction of creating a learning environment for this to happen.
In this research the authors talk about empowered teams and the importance of these teams specifically concerning changing a business college to incorporate the needs of the 21st century organization. If empowered teams can be created to make changes in the school organization, the teachers can teach team learning with a better handle on the concept since they are experiencing it themselves. This literature includes excellent information concerning empowered teams. "The idea of empowered teams signifies the sharing of decision making from management" (Czoka, 1996: Stewart, 1997). This study states that the empowered team must have its support from its peers. The empowered team in this study is the faculty. Input from all team members must be prevalent. All empowered teams must have access to relevant data and appropriate information systems in order to have a purposeful cultural change.

Trust is an essential to empowered teams. In this study there must be trust between administrators and faculty to make these changes in business schools. Trust will vary from organization to another, however much of the literature on empowered teams claims that it is vital to the team.
Peter Senge (1990) states that there are two levels of empowerment that need to be observed within an organization. The first deals with the dynamics between individuals in a relationship. The second level deals with the systems that are set up within an organization. This states that relationships among a team matter. In this study the relationship between administration and faculty matters. This is a concept that is very important and is in much of the literature. A lack of empowerment makes people feel that the organization does not have a system in place for high achievers. If there is empowerment, people will feel that they matter and that they can make a difference and that they count. This could apply in a classroom setting. Students, who are not empowered, could feel that they do not count and that they can not make a difference in the learning process.

Every empowered team starts out with a clearly defined mission. The team agrees on their mission and all activities within this empowered team are geared toward this mission. This gives the team a direction and keeps all the team members on the same page. Most organizations and schools do not have a clear mission, which will lead
the team in many directions and could bring chaos to the organization.

Another aspect of empowerment is decentralization. This is very important and the extent of the decentralization of the organizations control structure prior to empowerment will make a difference in the acceptance of empowered teams. Information technology is an important factor that enables the organization to let go and feel good about the empowered team to make the right decisions. In a decentralized environment, teams are responsible for their own decision; this makes it easier for teams to accept the decisions especially if all the information is available.

In this particular study, the college is in the third year of a new structure that has produced several empowered teams of faculty. The faculty has produced an atmosphere of team-oriented teaching and research. Since the elimination of many bureaucratic steps, the faculty has been able to develop rapidly, curriculum that focuses on team learning and research.

The research of this study looks at other business schools through a survey to determine if other business schools
were making any changes in their organization and to determine if the views mentioned in this study are common among other business schools. The results of this study reveal that future business schools by deans are viewed as open, dynamic, flexible, customized, collaborative, and proactive compared with present structures. Their view on empowered teams and team learning are perceived as important, effective, powerful, clear, interesting, and supported by the majority of the faculty.

Conclusion of review of the Literature
There is a limited amount of current literature concerning team learning. The literature that is present shows that colleges need to conform to the global economy. Many colleges are still educating like they did fifty years ago. Businesses have different needs from college graduates. Teams are becoming more important to businesses with the downsizing of their organizations. Companies want employees that are experienced in working in a team environment and that have interpersonal skills that are associated with the team experience. The review of literature has revealed many benefits of collaborative learning to students and to the teachers. Students have shared that they learn more in this type of atmosphere than
the traditional lecturing. Reports have shown students are more creative and increased self-esteem due to team learning. Team learning has made students active participants in the learning process as opposed to passive recipients to information. Team learning helps students learn many skills such as critical thinking, which is very important to the development of that student. Other skills that are a direct benefit to team learning are problem-solving skills, decision making skills and listening skills. The literature also shows that collaborative learning utilizes many of our senses and studies show that the more senses used in the learning process, the better information can be processed in our short term memory. There have been many studies that show that students prefer to learn in a collaborative type atmosphere. The students are the Universities customers. They must be heard. Team learning is the wave of the future going into the new millenium.
CHAPTER III

METHODOLOGY

This study focused on a classroom setting in Western Europe in the country of Croatia. The city where the college is located is Dubrovnik. There are many culture differences in the classrooms of Croatia than those of the United States. Many of the students enrolled at the college are looking or an American education. Many of the students are very excited about having American professors. For the most part the teachers of Croatia do not have industry experience and seem uninterested in helping students achieve their goals. The classrooms are very traditional. The professor stands up and lectures and there is rarely any class discussions. Many of the students are fearful of creating class dialog feeling that the professor is going to feel challenged. There is no real relationship between the teacher and the student. The professor will come in and do their job and leave. This leaves the student feeling it is the teacher versus the student. They develop this fear of their teacher, which creates anxiety and in the long run effects the students from learning.
The classroom behavior in these classrooms seems inappropriate compared to our standards in the United States. Cheating is a part of their culture in Croatia and is prevalent in the classrooms. The best students are involved in cheating. There is a constant stream of conversations between students during classes. This is a part of the culture. The students had such an impossible workload in high school that they had to cheat to graduate. Most of the teachers would look the other way if they saw a student cheating. The students had to work together in order for them to successfully cheat. In the classroom students would constantly took to each other. In their minds they are not being rude. This is what they are accustomed to doing throughout grade school and high school. A professor has much to think about and control in a classroom.

This study will focus on two different classes that are from the same course. The name of the course is Principles of Food Production. The researcher is teaching the course. The class has two-2-hour classes per week. There are approximently forty students in each class. Many of the students are from Croatia. The ratio is about 90% from Croatia and 10% are a mixture of students from countries
such as Italy, Germany and Canada. These students are not acquainted with American instructional methods. The class has been taught two previous times by American professors. Though the teachers were traditional by American standards, the students learned and enjoyed the classes. The students thrived on interaction and dialog with one another and with the professors. One aspect that is none existent in the Croatian society and the classrooms is the concept of teams. Things are very individualistic and it is every man for themselves. They have no idea of the team concept. In previous team projects, they often struggled with working together to a common goal. The students did enjoy the team projects but there were many conflicts. This study will focus on class number thirteen on the syllabus. This class is concentrating on soups and sauces. Throughout the coarse both classes were exposed to teams. The second hour of the majority of the classes, there was usually some type of team activity. The students seem to enjoy the team learning that they were exposed to. Most of the students were very active participants and commented to the professor that they were learning from this method.

In this study there is the control group (group 1), which served as the traditional and instructional method of
teaching and learning. This group was taught by way of straight lecture and very limited discussion and dialog. The material is from a four-page handout that would eventually be handed out to the students. The experimental group (Group 2) was the experimental instructional method group. This group was divided into teams of six students and there was a team leader in every group. The students and team leaders were responsible for every member of their team to know the material on the four-page handout. This handout is displayed as exhibit A. There was an unannounced pre-test given on soups and sauces for both groups. The students were instructed that this pre-test will not count towards their grade. The pre-test is exhibited as 1a. This test consists of ten multiple questions. The pre-tests was collected and eventually graded. Both groups were then be handed out the four page out-line on soups and sauces. Groups 1 and 2 both received two work sheets. These work sheets can be viewed as exhibits B and C. Exhibit B is a work sheet that enabled the student to retrieve information from the four page handout and answer the questions that the instructor feels is important information for the lesson plan. Exhibit C is a matching type exercise that the student once again can retrieve information that is pertinent to the lesson plan.
The control group received a lecture on everything on the outline and also received a demonstration on stocks and sauces. The control group was responsible for completing both work sheets on an individual basis. They were asked not to work together on these work sheets. The students were also told that they would have to hand in the work sheets at the end of class. The experimental group also received the four-page hand out but will then break into teams with a team leader. The instructor directed and encouraged students to help each other and work as a team to learn the material under the guidance of the team leader. The team leader was responsible for the group to learn the material and to complete both work sheets and be ready to hand in the material to the instructor at the end of the class. The instructor then did demonstrations on stocks and sauces. When the demonstrations in both groups are finished, a posttest will be handed out. This test will be given without any of the students in both groups' knowledge. This test was identical to the pre-test. After the posts tests the student were told that the tests did not figure into their grades. These results were evaluated and looked at the averages on all four quadroons of data. The four averages are the control group pre-test and post-test and experimental group pre-test and post-test. One
assumption was that both pre-tests averages from the groups were the same.
CHAPTER IV

RESULTS

The actual execution of this study in the classroom went very well. The students participated very well in both groups. The lecture class consisted of thirty-one students and a very diverse group of students. The team learning class had twenty-nine students. Both classes were equal in grade to-date, which was based on two quizzes and two assignments. The test consisted of ten multiple-choice questions and the scores were posted on a score up to ten. These scores can be seen in exhibit D. The scores from both classes with their pre-test and post-test are displayed here. The students were instructed to try their best and they also were informed that the test scores are not a part of their final scores. The results seem very positive if it is looked at individually.

Statistics

A t-test was performed on the pretest scores between the Control group and the experimental group. As can be seen
in Table 1. The scores were statistically significant. This implies that the basic assumption of homogeneity of the students in both groups did not hold. Hence, no further analysis was possible.

**T-Test**

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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<td><strong>PRECONTL</strong></td>
<td>29</td>
<td>5.45</td>
<td>1.38</td>
<td>.26</td>
</tr>
<tr>
<td><strong>PERTREAT</strong></td>
<td>31</td>
<td>6.10</td>
<td>1.42</td>
<td>.26</td>
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</tbody>
</table>

**One-Sample Test**

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<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
<th>95% Confidence Interval of the Difference</th>
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</thead>
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<tr>
<td><strong>PRECONTL</strong></td>
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<td>28</td>
<td>.000</td>
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<tr>
<td><strong>PERTREAT</strong></td>
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<td>30</td>
<td>.000</td>
<td>6.10</td>
<td>5.57 - 6.62</td>
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CHAPTER V

CONCLUSION AND RECOMMENDATIONS

This study focused on the city of Dubrovnik, Croatia. The research was focused at the American College of Management and Technology. The research treatment concerned a class of the Principle of Food Production course. The study examined students enrolled in two different course sections. The subject of the course content was soups, sauces and stocks. Most of the students had no prior experience in this subject. Ten multiple-choice questions were administered at the beginning of both classes before any of the material was discussed. This served as the pretest. The control group was provided instruction in a traditional manner consisting of lecture. It also was provided with supplemental materials consisted of two worksheets. Each class member worked individually and retrieved material from a handout that contained information from the lecture.

The experimental group was also given a pre-test, identical to that received by the control group. The treatment for
this class consisted of dividing the class into teams. A team leader was appointed by the instructor for each team. The team leader was responsible for discussing the material on the information sheet and for completing the two worksheets as a team.

The posttest was identical to the pretest. The posttest was administered to each student of both groups. The review of the literature on the treatment (team learning) is somewhat limited. The research on team learning indicates that students prefer collaborative learning as an alternative method than lecture.

**Recommendations**

This research hypothesized that team learning in an undergraduate academic environment would be a more effective method than lecture method. Traditional research designs which are employees to test such hypothesis are based on the homogeneity of class members. Such assumptions have usually been proven to be so at the undergraduate level, since there are numerous screening devises (such as SAT scores, high school grade averages, etc.) employed by the academic institutions. Hence, it is
recommended that the pretest be given the some time before the implementation of the treatment to satisfy the assumption of homogeneity of the study groups.
Bibliography


EXHIBIT A
**Chicken Consomme:**

*Ingredients:* Chicken stock, chicken rib bones (look for bloodiest bones), lemon juice, egg whites, mirepoix, spicebag

*Procedure:* Same as beef consomme.

If terms are known, you can make different soup just by garnishing the consomme differently. Some examples are:

- Consomme Bronoise: 1/4 inch diced mirepoix
- Consomme Julienne: Large matchstick cut mirepoix
- Consomme Allumette: Small matchstick cut mirepoix
- Consomme Florentine: Spinach
- Consomme Celestine: Thinly sliced crepe
- Consomme Dubarry: Cauliflower
- Consomme St. Germaine: Green peas

**THIN:** Use stock, not clarified.

**French Onion Soup:**

*Ingredients:* Onions, 1/2 chicken stock, 1/2 beef stock, spicebag

*Procedure:* Slice onions and sweat or smother in chicken fat, beef fat, or margarine. Remove lid from pan and evaporate liquid. Brown onions, add stock and spicebag. Cook a minimum of one and a half hours. Finish with sherry.

**Vegetable Soup:**

*Ingredients:* 1/2 chicken stock, 1/2 beef stock, mirepoix, peas or green beans, tomatoes, turnips, root vegetables, spicebag

*Procedure:* Dice all vegetables, same size. Put fat in pot, add hard vegetables, sweat until tender, don't brown. When the vegetables are translucent, add stock and spicebag. Cook one and a half hours. (Skim scum while cooking.) One-half hour before done, add tomatoes and peas.

**Beef Broth with Mushrooms and Barley:**

*Ingredients:* Beef stock, beef cubes, sliced mushrooms, small diced mirepoix, barley, spicebag, fat

*Procedure:* The best way to incorporate flavor is to brown beef in fat, and when colored, add small dice of mirepoix (will give flavor and a hint of color). When tender, add mushrooms, stir, add stock, add spicebag. One-half hour before soup is finished, add barley, skim. (Barley takes 20-30 minutes to cook well.)

**Scotch Broth:** Same as beef barley except replace beef with lamb and beef stock with lamb stock and remove mushrooms.

**THICK:** Tomato, gumbo, clam chowder, minestrone (2-3 pastas, 2-3 bean varieties, vegetables, cabbage). Canadian cheddar bisque (can be a thick cream or specialty soup).

**Creme or Creamy:** Thick, creamy consistency.
Soups and sauces

Anything you make is a product of your ingredients. If you can think of a better flavor or seasoning, use it!

 TERMS

AU JUS: Thin liquid from pan drippings

BUERRE MANIE: Butter and flour kneaded in hands and dropped by little balls into a sauce and whipped quickly; used when in trouble and product needs to be thickened quickly

CORNSTARCH: A pure starch; mix with liquid (stock, etc.) or water; called a whitewash or slurry

LIASON: Egg yolks and heavy cream; used as a finishing and enriching agent

MIREPOIX: Celery, onions, carrots; used as a seasoning or garnish

ROUX: Equal parts flour and fat, cooked; used as a thickening agent

SPICEBAG: Thyme, bayleaf, parsley, peppercorns; may or may not be tied in cheesecloth

SAUCES

FIVE MOTHER SAUCES: Tomato, Hollandaise, Veloute, Espagnole, Bechamel

**Tomato:**

*Ingredients:* 3 parts tomato (whole canned), 1 part chicken stock, spicebag, mirepoix, salt pork (you want a salty, pork flavor in this sauce), ham hock (optional), garlic (optional)

If too many seasonings are used in a Mother Sauce, its versatility is pulled away. You must use a heavy bottomed pot for cooking.

*Procedure:* Render salt pork (melt fat for a higher heat), add mirepoix, coat with fat and sauté. Add tomatoes, chicken stock, and spice bag. Cook 6 hours. Skim while cooking. When finished, run through food mill and strain through china cap.

**Hollandaise:**

*Procedure:* Use recipe #1 in *The Professional Chef* (page 321). The thickening agent is the egg yolks. Hold hollandaise at 100-130° degrees for one and a half to two hours only. Tabasco sauce is preferable for seasoning hollandaise because cayenne pepper leaves tiny red specks.

**Veloute (Chicken, fish or veal):**

*Chicken Veloute:*

*Ingredients:* Spicebag, chicken stock, mirepoix, roux (flour and margarine - a blonde roux), chicken fat or butter

*Procedure:* Sauté mirepoix in margarine (don't brown), add flour and develop a roux, cook 8-12 minutes. Add stock, add spicebag. Cook 6 hours minimum. Skim while cooking. When done, strain only.

SHOP TALK
Esagnole: One of the Grand Mother Sauces. The Beef Mother Sauce is one of the most highly developed sauces and requires the most care.

**Ingredients:** Beef stock, beef fat or margarine, mirepoix, crushed tomatoes, spicebag and flour

**Procedure:** Clarify margarine, saute mirepoix and brown (to retain heat from fat and loosen moisture content). Add flour and develop a brown roux (15-20 minutes cooking time). Add beef stock, tomatoes and spicebag. Simmer 6 hours, strain, put back on fire to simmer longer. If the sauce reduces too far, add more beef stock to retain desired thickness. A good Espagnole can simmer up to 36 hours. Needs body, translucency, clarity and sheen.

*Simmer until proper consistency is attained.

Demi-Glaze: 1 part Espagnole, 1 part beef stock. Reduce to one-half, finish with sherry. 64 servings/gallon of demi-glaze

Bechamel: (White Sauce)

**Ingredients:** Milk, margarine, roux, piquancy onion (peeled onion stuck with 2 bay leaves and 4 cloves)

**Procedure:** Heat milk with piquancy onion, bring to 190°, while heating develop a roux. Cook 8-10 minutes. When milk is at 190°, whip roux into the milk. Use stainless steel pot to make roux. If aluminum is used, the roux will be gray. Cook one and a half to two hours. Strain.

A bechamel reduction is hard to bring back. Don't be afraid to cook a bechamel. Whip roux in so it doesn't settle on the bottom of the pot and scorch.

THICKENING AGENTS

THICKENING AGENTS: Roux, Liason, Cornstarch, Pure & Unpure Starches, Beurre Manie, Cold Water Starch

**Roux:** Three types — white, light or blonde, and dark. Color is determined by cooking time. (Minimal cooking time is 8 minutes.)

White roux: 8 minutes
Blonde roux: 10-14 minutes
Dark roux: 40 minutes minimum (cook in black iron skillet, stirring continually)

**Liason:** Temper liason with some hot liquid, add into product you’re thickening. Whip in quickly and don’t boil or liason will break.

**Cornstarch:** Add to product when boiling, will thicken instantly.

**Pure Starches:** Arrowroot, tapioca, rice and potato starch

**Unpure Starches:** Flour

**Beurre Manie:** Drop by little balls into sauce and whip quickly.

**Cold Water Starch:** Mix with sugar first to separate starch cells.

NOTES: In order to properly incorporate starch, you need to separate the starch cells with liquid, fat or sugar. Starch cells begin to expand at 140° and stop at 204°
STOCKS

BEEF STOCK:

Ingredients: Beef round bones, tomato product, mirepoix, spicebag, water, beef fat, chicken fat or margarine

Procedure: Cut round bones into 3" pieces, put in roasting pan, roast in oven. When half done, add a tomato product (puree, juice, paste, crushed or scraps) and roast for a while longer until browned. After browning, put in a stockpot with COLD water always. Put on stove and simmer, NEVER BOIL. As the stock comes to a simmer, a scum forms. Skim this scum, cook for 6 hours, then add the mirepoix and spicebag. (Saute vegetables in beef fat, margarine or butter until browned and caramelized (20-30 minutes); add to stock. Cook 6 more hours, strain and taste. If the flavor isn’t strong enough, return to stove and reduce until desired flavor is reached.

*Peelings or scraps of vegetables may be used as a mirepoix. They must be washed first. NEVER salt a stock.

CHICKEN STOCK:

Ingredients: Chicken bones (backs, necks), mirepoix, spicebag, water

Procedure: To achieve a light colored yet flavorful stock, the bones are not sauteed. Add bones to COLD water, bring to a simmer, skim thoroughly, add mirepoix and spicebag, simmer 6 hours, strain, taste, reduce if more flavor is needed.

FISH STOCK:

Ingredients: Best made with flat fish or flounder bones. If using head, wash very well. Never use guts.

Procedure: Layer mirepoix and spices on bottom of pot, put bones on top (to hold down vegetables and spices and keep from floating to top). Mirepoix is thinly sliced or shredded. Add water, simmer for one hour, strain, taste, reduce if more strength is needed.

SOUPS

FIVE CLASSIFICATIONS: Clear, Thin, Thick, Cream, Puree

CLEAR: “Consomme,” perfectly clear soup, a clarified soup. Three parts to clarification: protein, egg whites and acid.

Beef Consomme:

Ingredients: Spicebag, mirepoix, flavorful beef stock, clarification (protein such as ground beef, egg whites, acid such as tomatoes)

Procedure: Mix well: small dice of mirepoix, ground beef, egg whites, spicebag, spices, canned tomato product. Add the above mixture to COLD beef stock, stir well and put on stove. When heat is applied, the whites will congeal and a raft will be formed. Pull pot to side and simmer. Stock will continue to flow through raft and filter and purify itself and will also continue to flavor stock. Do not boil. The raft will break and all impurities will go back into the stock. Syphon off into china cap with a cheesecloth lining.

SHOP TALK

**
**Cream of Mushroom:**

*Ingredients:* Chicken stock, roux (flour and margarine), milk, mushrooms, spicebag, white mirepoix (celery, onions only)

*Procedure:* Melt butter, add celery and onions, cook, add mushrooms, add flour and develop a roux, add stock and cook, finish with milk.

**Split Pea:**

*Ingredients:* Split peas, chicken stock, mirepoix, spicebag, ham hock, salt pork

*Procedure:* Render salt pork, sweat mirepoix, add peas, stir to coat, add stock, spicebag, and ham hock. Simmer until beans are tender. Remove ham hock and spicebag. Run through food mill or blender, then through china cap, chop meat from hock and add to soup.
EXHIBIT 1A

PRE-TEST- Soups and Sauce Class

Name________________
Class________________

Please circle the answer that you feel is correct. This test will not count towards your grade in this class.

1) Mirepouix consists of the following ingredients;
   A) Carrots, onions, and celery
   B) Egg yolks, heavy cream
   C) Thyme, bayleaf, and peppercorn
   D) Any vegetable that you desire

2) Which thickening agent is used to thicken a veloute?
   A. Cornstarch and water
   B. Eggyolks and cream
   C. Buerre manie
   D. Roux

3) A roux is defined as;
   A. Cold water and flour cooked over heat
   B. Equal parts of fat and flour by weight cooked over heat
   C. One of the Mother sauces
   D. None of the above

4) A beef stock should simmer for how long?
   A) 20-30 minutes
   B) 2 hours
   C) 24 hours
   D) 6-8 hours

5) What is a Bechamel?
   A) A famous chef
   B) A thickening agent
   C) Milk stock thickened with a roux
   D) A type of beef stock
6) Which ingredients are used to clarify a consommé?
   A) Egg yolks and cornstarch
   B) Ground beef, egg whites, and tomatoes
   C) Rice
   D) All the above

7) What are the five Mother sauces?
   A) Tomato, chicken, beef, mirepouix and consommé
   B) Aujus, chicken, hollandaise, consommé and tomato
   C) Tomato, hollandaise, veloute, espagole and bechamel
   D) Mirepouix, roux, slurry, laison and aujus

8) What is the 5th classification of soups? Clear, thin, thick, puree;
   A) Cream
   B) Consommé
   C) Clarified
   D) Both B and C

9) Which classification of soup does split pea fall into?
   A) Cream
   B) Consommé
   C) Thin
   D) Puree

10) Which of the following is not a thickening agent?
    A) Buerre Manie
    B) Roux
    C) Laison
    D) Brunoise
EXHIBIT B

Soup and Sauce worksheet

Name: __________________

Class: __________________

1) List and explain the different thickening agents;

2) What is a mirepouix?

3) List and explain the five Mother sauces;

4) Describe three types of stock;

5) List and describe the five classifications of soups and give one example of each;

6) Define brunoise and julienne;

7) How do you clarify a consommé?
EXHIBIT C
EXHIBIT C

Sauces and Gravies

Match each word or phrase in column A with its definition in column B. On the line in front of each word, write the number that identifies the matching definition.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Column B</th>
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<tbody>
<tr>
<td>Espangole</td>
<td>1. A sauce made by adding selected ingredients to one leading sauces.</td>
</tr>
<tr>
<td>Leading sauces</td>
<td>2. To bring milk to temperature just below the boiling.</td>
</tr>
<tr>
<td>Deglaze</td>
<td>3. A leading sauce made with mirepouix, roux and brown stock.</td>
</tr>
<tr>
<td>Scald</td>
<td>4. An unthickened gravy.</td>
</tr>
<tr>
<td>Bechamel</td>
<td>5. A leading sauce made with egg yolks and butter.</td>
</tr>
<tr>
<td>Roux</td>
<td>6. A leading sauce with milk &amp; roux.</td>
</tr>
<tr>
<td>Au jus</td>
<td>7. A mixture of equal parts of flour and fat or butter.</td>
</tr>
<tr>
<td>Veloute</td>
<td>8. A leading red sauce.</td>
</tr>
<tr>
<td>Mirepouix</td>
<td>9. A flavored liquid made from the juices left after the meats have been cooked.</td>
</tr>
<tr>
<td>Tomato sauce</td>
<td>10. Diced or roughly chopped onions, carrots and celery.</td>
</tr>
<tr>
<td>Hollandaise</td>
<td>11. The five basic sauces from which small sauces are made.</td>
</tr>
<tr>
<td>Small sauce</td>
<td>12. A leading sauce made from roux and a light-colored stock.</td>
</tr>
<tr>
<td>Gravy</td>
<td>13. To add a liquid to a pan to dissolve the crusted drippings left after meats have been cooked.</td>
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