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## Case Study

### Iroquois Central School District and Castle Learning Online

### Elma, New York

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#### Demographic Background, Elma, NY

Elma is located in Erie County, New York, and is the home of Iroquois Central School District. The town of Elma is located in the north-central part of Erie County, east of Buffalo, New York, and east of Lake Erie. The county had a population of 11,303 in 2007, a decrease of 0.09% since the 2000 Census.

The estimated median household income in 2007 was \$65,842, compared with the New York State median of \$53,514. This was a change from \$56,334 in 2000 for Elma. The value of a median home in Elma was \$178,032 in 2007, compared with New York State at \$311,000. The racial makeup of the population is primarily White, non-Hispanic at 98.6%, with a Hispanic population of 0.6%.

**Iroquois Central Schools** served a total of 2,854 students in Grades K-12, with a population of 737 students, in grades K-3 in three Primary schools, 395 students in grades 4-5 in one Intermediate School, and 670 in grades 6-8 in one Middle School and 1,048 students in grades 9-12 in one High School.

The population of any particular school reflects that of the entire district, according to the 2006-07 NYSDOE BEDS [Basic Educational Data System] census, with approximately 5% eligible for Free Lunch, 5% eligible for Reduced-Price Lunch, a student stability rated at 96%, and a racial/ethnic diversity of 0% American Indian or Alaska Native, 1% Black or African American, 2% Hispanic or Latino, 1% Asian or Native and 98% White.

#### District Assessment of Current Education Needs

I was able to work with Katherine Coles, Technology Coordinator for the Iroquois Central Schools. Through her efforts, educators responded to questions posed about how they use *Castle Learning Online*, a review, testing and assessment resource for grades 3-12 found at [www.CastleLearning.com](http://www.CastleLearning.com). This study will explore those responses.

In reviewing the background to this study, we looked at how the district has set forth three important goals for their teachers and students in 2008-09, two of which are germane to Castle Learning Online. Within these two goals were suggested needs, for which educators should focus on improving.

**Goal 1—To ensure that all students meet high standards for academic performance with needs including:**

- Services for those students experiencing difficulties meeting academic expectations in grades 9-12.
- Skills and strategies necessary to read critically in content areas.
- Strive for 85% benchmark mastery in all subjects.

**Goal 2— Identify and implement efficient and effective strategies for improving student achievement, with needs including:**

- Utilizing data to improve student achievement.
- Support professional development initiatives to help students meet the NYS standards.
- Skills and strategies necessary to read critically in content areas.
- Strive for 85% benchmark mastery in all subjects.
- Provide teachers with skills to integrate technology with instruction.

### **Castle Learning Online in Iroquois CSD Schools**

Students in Iroquois Central Schools have had the use of the *Castle Learning Online* website for more than three years, and in 2007-08, students answered over 611,404 questions, with the greatest emphasis placed on Social Studies questions (273,919), the Sciences (251,211), Math (51,699) and English (20,794).

In order to learn how teachers currently use *Castle Learning Online*, a Teacher Questionnaire was provided to teachers in Iroquois CSD who are using *Castle Learning Online*. The questions encompassed two primary areas: (a) How teachers currently use *Castle Learning Online* and (b) how effective is the use of *Castle Learning Online* for teachers and students.

### **How Teachers Currently Use *Castle Learning Online***

The Teacher Questionnaire provided three questions regarding how teachers were using *Castle Learning Online*, how often they were using it, and what features were being used for their students. The results revealed the following:

- **Purposes for Use:** Teachers (85% of those responding for each selection) are using *Castle Learning Online* primarily in three distinct ways:
  - For remediation before a quiz or test.
  - As a review for several units of study.
  - For extra credit.

At least 70% used *Castle Learning Online* for homework. The least use of *Castle Learning Online* was for a test or as an introduction to a unit of study.

These usage options may suggest that *Castle Learning Online* is a supplemental tool that supports the classroom lesson when it is primarily used for remediation after assessing a student's strengths and weaknesses and for review to prepare for curriculum assessments.

- **Frequency of Use:** Teachers use *Castle Learning Online*:
  - Half of the respondents use *Castle Learning Online* a minimum of once per month, with at least the same number using *Castle Learning Online* almost every week
  - One respondent uses it every day.
  - None use *Castle Learning Online* exclusively before a major exam, as might be expected when students in New York take final exams or the challenging Regents Exams in June.
  - The responses suggest, instead, that *Castle Learning Online* is used throughout the school year.
  
- **Most Used Features:** Features of *Castle Learning Online* that teachers gave the most emphasis in these three areas:
  - Sharing assignments with colleagues (i.e. a feature that allows a teacher, who creates an assignment, to publish it for use by other teachers).
  - Creating vocabulary worksheets and the corresponding flash card assignments (i.e. with an extensive database of thousands of vocabulary terms for all subjects, along with definitions, teachers can may provide students with vocabulary derived from any assignment or by directly selecting a unit of study and then the vocabulary associated with that unit).
  
- **Often Used Features:** To a lesser extent, with about 35% of the respondents answering in the affirmative, the teachers use several other features of *Castle Learning Online*, including:
  - Importing questions from old assignments (i.e. a feature that allows a teacher to view questions from all prior assignments, recognize how many students displayed a weakness or a strength with that content area and then to be able to select it, with checking a box, to be included in a new assignments; thus, teachers can “review” while giving students “new” questions).
  - Grouping assignments into folders (i.e. a feature that allows a teacher to organize their assignments into units of study and to then easily find and reuse old assignments or questions within those assignments)
  - Using the ‘quiz mode’ for assignments (i.e. a feature that allows a teacher to give students the assignment questions without the ability to review the hints and reasons associated with a question that allows for a re-try if a question is answered incorrectly).
  - Checking state standards (i.e. a feature that allows a teacher to be assured that questions in a particular unit are meeting the state standards that they wish to focus upon that day or during the week).

### **Effectiveness of *Castle Learning Online* in Meeting Needs of Students and Teachers**

The Teacher Questionnaire also provided teachers an opportunity to elaborate on the effectiveness of *Castle Learning Online* in meeting the academic needs of their students. In these responses, teachers refer to the NYS Regents exams, which are state course tests given each year, similar to EOC (End of Course) or EOG (End of Grade) exams administered in other states.

- **Type of Students Who Benefit:** When asked what kinds of students would benefit most from using Castle Learning Online:
  - 100% of the teachers responded very useful for both high-end achievers and average students
  - 85% responded very useful for students needing constant remediation benefit.
  - It was evident that teachers generally agreed all kinds of students can potentially benefit equally because [www.CastleLearning.com](http://www.CastleLearning.com) provides all teacher and all students access to questions at all levels—basic, intermediate and advanced.
  
- **Benefits Offered to Teachers:** When asked what benefits does Castle Learning Online offer to you, educators commented:
  - "I like Castle Learning Online because of the instant feedback provided on screen and with the reports that are available."
  - An elementary school educator conveyed the idea that the benefit was actually through the parents of his students, remarking that "Parents use the program as reinforcement."
  - Another educator simply added that some parents said they like Castle Learning Online because "they thought it was great that their child was using it at home."
  
- **Performance Results:** When asked whether students perform better or exceed expectations on state exams when using Castle Learning Online, comments included:
  - One teacher found his students trying even harder. "Once students know I have my eye on them, they begin to take their time and answer questions to the best of their ability."
  - This same teacher remarked, "In my 4<sup>th</sup> grade class, we use Castle Learning Online to do reinforcement activities and to discuss test taking strategies. Students always enjoy using computers, so it helps to 'bring in' some reluctant participants."
  - An elementary teacher responded, "My wife and I both teach 5<sup>th</sup> grade and we absolutely depend on Castle Learning Online to prepare the students for all the state tests, the DBQ, the ELA and the math. We also use the program to reinforce math and ELA skills." The teacher concluded that *Castle Learning Online* is an "excellent program."
  - An elementary 4<sup>th</sup> grade teacher focused on specific skills in various subjects she teaches. "Their Math has improved in the problem solving areas." and added that their "awareness of social studies and science 'concepts' seems stronger."
  
- Before any students' knowledge and skill base is tested on formalized curriculum measurements, teachers are quick to focus on the day-to-day experience of their students, noting a comfort level with the course content and a better feeling about how well they will do.
  - A 4<sup>th</sup> grade teacher made several observations she made about her students , "I feel that having the flashcards is a great way to increase student knowledge of the content areas. It is a different way for the students to learn, especially at this level."
  - She added, "They feel that using the computer is fun and don't realize that they are learning at the same time."

- While this study does not provide raw data, a summary of the remarks made by teachers pointed out how they viewed performance of their students – The 4<sup>th</sup> grade teacher who liked the flashcard feature, stated
  - “For most of my students, the geometry grades increased a bit when using the Castle Learning Online website. I think it is due to the colorful graphics in the questions” and added she liked “the variety of questioning there is.”
  - She drew this conclusion -- Castle Learning Online “benefits so many students. Because the students are able to take their time and go back to an assignment, as well as see the instant feedback of whether or not they answered the questions correctly, they seem to want to do better and are impressed with themselves when they do well.”
  - Similarly, a high school teacher of Geometry, Advanced Algebra and Trigonometry explained that they gave assignments as optional before a test and concluded that “normally students working on the assignments perform better than if they didn’t spend the time on it.”
  - A high school teacher of Chemistry and Applied Physical Science supported that sentiment by stating, “There is a correlation between students who do the Castle Learning Online assignments and the students that do well on tests. Students say that they find the assignments helpful and efficient.”

**Concluding Thoughts**

Many of the goals set forth by the Iroquois Central Schools are being met by the use of *Castle Learning Online*.

| <b>GOALS : Iroquois Central Schools</b>  | <b>SERVICES : Castle Learning Online</b>  |
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| <p><b>1. “To ensure that all students meet high standards for academic performance.”</b></p> | <p><b>Educators are reporting that Castle Learning Online provides a service that:</b></p> <ul style="list-style-type: none"> <li>○ Helps students in grades 9-12 (Goal #1) and in all grades from 3-12, improve their academic performance</li> <li>○ Helps students excel in content area, as a supplemental to the regular classroom education, in order to meet and exceed mastery in all subjects</li> </ul> |

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| <p>2. “Identify and implement efficient and effective strategies for improving student achievement.”</p> | <p><b>Educators have reported that Castle Learning Online provides a service that</b></p> <ul style="list-style-type: none"><li>○ Supplies reports for individual students and whole classes, thereby allowing the teacher to utilize this data to improve student achievement in the future.</li><li>○ Provides FREE Staff Development for all professionals throughout the TRIAL and SUBSCRIPTION period upon request. Teachers report that their experience in sessions with Castle Software’s professional Staff Development Trainers has proven invaluable as they employ many of the techniques explored in these hands-on sessions.</li><li>○ Provides a cost-effective and time-saving way to integrate technology into the classroom, along with <i>Castle Learning Online</i> being used at home or the public library. Technology and the classroom are integrated with much benefit derived for both the teachers and students.</li></ul> |
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