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The Use of Intraoral Camera in the Assessment of Students Requirement (Work)

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Introduction

The dental intra-oral camera has made a significant input in dental treatment .it allows the dentist and the patient to get a close-up look at areas of special interest in the patient's mouth.(As a dental friend once remarked... "to see is to know... to not see is to guess"). When we can "see “a defect filling on a monitor it becomes apparent what needs to be done. It then expanded in almost to be use in several clinical specialties (Haak.R2000).

The biggest hurdle is patient’s acceptance treatment is that they often do not understand the dental condition affecting them. With an intraoral digital camera, patient education is simplified by being able to help the patient see what the dental professional see (Erten H, 2006). Newer intraoral cameras have USB connections, making them portable and easy to link to your existing network. With bright LED or halogen light sources, these intraoral digital cameras also allow to visualize more, helping you to diagnose carious tooth or fractured fillings which the naked eye may be mistake with, by the introduction of Intraoral cameras this is now totally possible. Dental and gingival conditions can be shown and the available dental treatment alternatives can be discussed. The bottom line is extra and intra-oral imaging is... patient can see what doctor sees". There is nothing better than having both the doctor and the patient on the same page and understand what needs to be done. These photographs help you make an informed decision on how you would like to proceed with your dental treatment.

The intraoral camera is basically a video camera that can be placed in mouth is approximately the size of the dental handpiece. or dental mirror and has a light built in to the camera which illuminates the area to be examined. This camera has the ability to take a video or a series of still photographs of the area, allows displaying images on a computer monitor. The images can be saved and discussed with the patient. This exciting technology provides the knowledge needed to make important dental decisions. Patient can now participate in his own dental care; no more hidden treatment and no unknowns to deal with during dental visits.

It needs an advanced and expensive technological devices and software that enables the supervisor to have a precise method of evaluation that is repeatable and applicable in different type of work and in different fields of dentistry, In addition to that, a skillful well trained staff is needed in the

clinic at the time of work, whereas in this proposed project the assessment is repeatable, and could be re-evaluated again at any time and at any step of the work and by any other supervisor.

In the past twenty years, most of the major technological breakthroughs in electronics have really been part of one larger breakthrough, which is converting conventional analog information (represented by a fluctuating wave) into digital information (represented by ones and zeros, or bits). This fundamental shift in technology totally changed how we handle visual and audio information; it completely redefined what is possible.

The digital camera is one of the most remarkable instances of this shift because it is so truly different from its predecessor. Conventional cameras depend entirely on chemical and mechanical processes. On the other hand, all digital cameras have a built-in computer, and all of them record images electronically.

Intraoral camera converts the image to the language that computers recognize bits and bytes. Essentially, a digital image is just a long string of 1s and 0s that represent all the tiny colored dots or pixels that collectively make up the image.

Uses of IOC in KOD, IIUM

The KOD is a new kulliyyah that has started from the top, so it goes with the innovation of every things, with the innovation in everything looking for all new things in the world, in order to achieve the best methods of teaching in addition to the best treatment plan and management of the outpatients, one of these innovation is the introduction of a new assessment method of student employing the IOC.

The introduction of this imaging device as a method of assessment of students work in different fields of dentistry is not reported yet.

1. Direct and continuous controlling of the students work.
2. Direct work assessment and grading system.
3. Documentation of the students work in case of reevaluation or checking by external examiners.
4. Documentation of the different diseases and oral lesions, in the head and neck area as a filing system, which are easy recall for teaching & researches purposes, and to evaluate the prognoses and consultation with others through the internet.
5. Possibility of demonstration of special, interesting cases.
6. Less time and effort consuming by the staff, also less number of staff is needed.
7. In filing system, for patient records and researches, and the ability of recall of any document instantly at any time.
8. In the diagnosis purposes for the operative treatment, it is also an extremely valuable tool in detecting fractures in teeth and seeing the current condition of existing restoration.
9. In the documentation of the different diseases and oral lesions, easy recall of these status for teaching purposes, prognoses of the case and consultation with others through the internet.
10. In Forensic dentistry, intraoral photographs should be used to show anatomic details of teeth restorations, periodontium, occlusion, lesions, etc. and to compare with the previously recorded informations.

Intra Oral Camera and the Dental Examination

Most cameras have the ability to zoom in on one tooth or… give you a video tour of the entire mouth. In our dental office your images are displayed on a computer monitor that is mounted directly above the dental chair.

In the digital age we are able to print out a series of photographs, and these photographs may be sent to insurance companies or to a referring specialist’s office (Goga 2004).

During diagnosis, the intraoral camera helps with clearly defined images that show details that may be missed by standard mirror examinations. It can also be an educational tool, allowing views of the inside of a mouth to confront problems or review procedures as they progress. Seeing the dental condition big and close up for the first time can be surprising. You may never have realized the true condition of your teeth. This camera is an important aspect of patients' dental care. Intraoral technology can help the patient and the dentist uncover problems before they become serious. This is a crucial part of conservative and preventative dental treatment. This saves money, and it may save teeth! For example, it is easy to see cracks in old amalgam fillings which are not visible with x-rays. More importantly, it allows the patient to view this and other types of problems in detail and immediately realize that the condition needs to be corrected before it becomes worse. The intraoral camera can be very useful in detailing what needs to be done to alter, change or enhance your smile using various procedures in cosmetic dentistry (Samaras2005).

It can also show the level of personal oral care that a patient has used. With the intraoral camera, any areas that may have been missed during brushing or flossing are much easier to see than with a mirror and the naked eye. When conditions such as periodontal problems are caught in their earliest stages, less invasive corrective treatment is possible. It easily and accurately allows the doctor to monitor and enhance what cannot be seen with the naked eye (Mary1997).

The Following Specialties are Included

- **Conservative dentistry**
  Grading system of cavity preparation and different steps in the operative procedure.

Figure 1: Technology of the intraoral camera close up of monitor Digital Cam Mode showing:

Cracks in old amalgam fillings which are not visible with x-rays
Broken teeth
Broken fillings
Worn fillings
New decay (cavities) fig 1



fig.(1)


- **Periodontology**

Figure 2: Tartar (calculus), Plaque

- **Prosthodontics &Orthodontics**
  Occlusion, treatment plan how the teeth fit together
- **Oral medicine**
  Hard and soft tissue lesions in the head & neck, case presentation
- **Oral surgery**

By using the IOC we can show to the students life surgery procedure for learning purposes in addition to that IOC can help us in assessments of the student work in oral surgery for example the manipulation of the tooth during extraction.

Although the importance of the IOC is to show the students such technique in oral surgery procedure the following are an example of the mentioned above which include:

1. Surgical extraction of teeth
2. Surgical removal of impacted teeth
3. Removal of oral lesions of various origin & type
4. Soft & hard tissue Biopsies and others

- **Forensic dentistry**

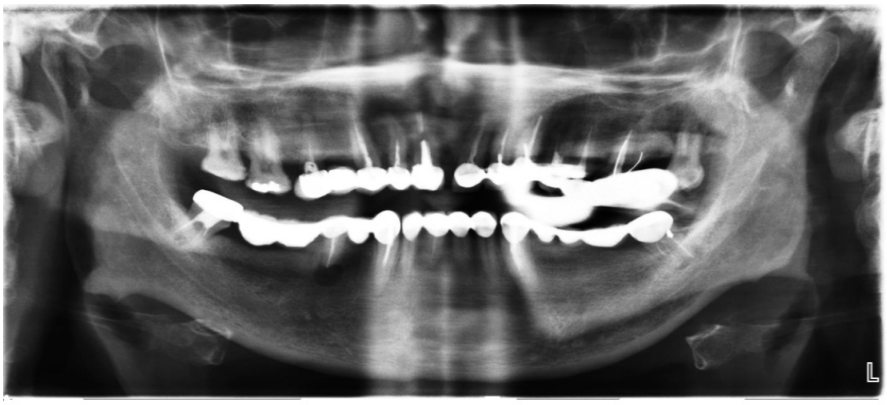
Forensic dentistry or forensic odontology is the proper handling, examination and evaluation of dental evidence, which will be then presented in the interest of justice. The evidence that may be derived from teeth, is the age (in children) and identification of the person to whom the teeth belong. Intraoral photographs should be used to show anatomic details of teeth restorations, periodontium, occlusion, lesions, etc, which is of a great value in identifying the subject (Tsuzuki 2002).

- **Oral radiology**
  It is well known that x-ray is one of the important investigations in dentistry.
  This speciality includes the following:
  Extraoral panoramic (OPG) fig. (3)
  Intraoral periapical radiograph
  CT scan

Figure 3: A&B Extraoral panoramic (OPG)

(A)

(B)



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