NOTT NECTAR

Activity coordinated by:
SI4LIFE

SCENARIO-BASED LEARNING - CRITICAL INCIDENT

TRAINING PATTERN 2

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TITLE

Critical Incident analysis

GENERAL DESCRIPTION

A Critical Incident in the workplace presents a learner with a learning opportunity to reflect in and on action. The ability to recognise a learning opportunity in the workplace and learn from it is a higher-order cognitive skill that teachers and trainers should be seeking to develop in learners. Thus, there has been a growing interest in building learning activities that support groups of workers who share knowledge through reflection on critical incidents.

Workers, in their role of "learners", are invited to recognise these critical incidents as learning opportunities, to reflect on them critically and then finally share these reflections with other learners. This process situates learning in authentic learning environments where students are able to undertake work that will enable them to make a connection between the theoretical content of their courses and real-life situations.

WHEN IS IT USEFUL?

The Critical Incident analysis is valid and appropriate for developing interpersonal skills and self-awareness. It is a valuable educational technique which enables workers, in their role of "learners", to draw on past experiences and make sense of them, not only facilitating learning from professional practice but also helping to bridge the gap between theory and practice.

This technique supports a "situated learning" process: firstly, the social, interpersonal and cultural surroundings within which learning occurs affect both the learning processes and outcomes; secondly, the skills, strategies, and learning processes are seen as tightly connected to their immediate contexts of practice rather than as neutral tools available for varied general application.

Data presented in literature show evidence of participants seeking and offering comments, reflecting on critical incidents, describing what happened and assessing their own actions, making the connection between theory and practice, identifying and defining problems, and adopting a more structured and systematic approach to problem solving.

HOW TO IMPLEMENT IT? - SUGGESTED PHASES AND TASKS

A critical incident in the workplace is a singular, contextually unique and specific event that presents a learner with a learning opportunity to reflect and act on. Learners can do this by keeping "*Learning Logs*" which are "*records of the reflections on critical incidents from their workplace*". Normally, the learning log is a document based on a template defined by the trainer/teacher, which supports the formalization of the main "steps" or phases of the critical incident analysis.

A Learning Log is not a diary of events, nor is it a record of work undertaken, it is rather a personal record of the occasions when learning occurred or could have occurred. It also relates prior learning to current practice and is retrospective and reactive in action. The log records how one approaches the incident, their successes and failures with it, and any issues that need to be solved.

The critical incident analysis can be carried out in phases:

PHASE 1: IDENTIFYING A CRITICAL INCIDENT

Learners are asked to identify an incident from their workplace which they consider significant to their roles as professionals.

PHASE 2: PRESENTING THE CRITICAL INCIDENT

- ✓ Learners are asked to describe what, when, where and how the identified critical incident occurred. The description must outline the critical nature of the incident and include references to what should or should not have been done and the learning gain derived from the incident.

✓ Learners are also invited to identify the special attributes or aspects of this incident that set it apart from all the others in their experience.
✓ Learners are finally invited to reflect on what happened to them in terms of their learning gain as professionals.

This description should be shared with a group of learners (from 3 to 8) through face-to-face or web-supported interaction. Anyway, the formalization of the description through a Learning Log document could support self-reflection and allow students to draw meaning from their experiences.

PHASE 3: DISCUSSING THE CRITICAL INCIDENT

In each group, learners are invited to discuss and comment on the Critical Incidents described by the other members of the group. Learners attempt to make insightful comments and observations about other presentations with the explicit intent of learning from the shared experience. Again, this phase can be carried out through face-to-face interaction or through web-supported interaction. The formalization and sharing of Learning Log documents in Phase 2 could support a more focused and effective analysis of the incidents, especially if the group includes many learners. After the discussion, the Learning Log can be updated by the learner including the main comments received by the other members of the group.

PHASE 4: SUMMARY: MAKING THE CONNECTION BETWEEN THEORY AND PRACTICE

The last phase aims to bring theory to bear upon practice and practice to inform theory. Learners should make the connection between what is presented to them as part of their professional education and what they are confronted with in their daily work. This process leads to a 'summary reflection' which seeks to identify:

the extent to which learners feel that the theory enabled them to cope with the critical incident they encountered at their workplace,

the adequacies and inadequacies of their theoretical knowledge,

and any enlightenment they may have gained from reflecting on the experience of their peers and from the reflections of others on their own experience.

This final summary should be formalized in the Learning Log as a compendium of the learning process.

The described training pattern can be managed both in presence (F2F) and online, with the support of the proper technologies.

Since Phase 1 and Phase 4 don't envisage collaborative tasks or interaction, they can be carried out in the classroom or at home.

The support of a Learning Log template shared by the teacher/tutor is recommended, both in the event that the activity is carried out face-to-face, and in the event that the interaction id mediated by ICTs.

The sharing of such documents at the end of Phase 2 in order to support Phase 3 can be easily facilitated by a file sharing area like Google Drive or the ones provided by the main Learning Management Systems (such as Moodle) or conferencing systems (like TEAMS). If shared by students in advance, Learning Log documents could be also distributed in printed version (each student receive a printout of the documents shared by the other learners).

The presentation of the critical incidents through Learning Logs in Phase 2 could be also accompanied by an oral presentation through a web-conferencing system.

Phase 3 can be performed at distance either synchronously or asynchronously. Web-conferencing systems could support such an interaction easily, but it is advisable with very small groups (3-4 learners). Asynchronous interaction would leave more time for reflection in this phase (a week for instance) and would allow more people (up to 8 learners) to interact about different critical incidents. A proper set up of a series of discussions in a forum area (e.g. one discussion for each analysed critical incident) could foster an effective exchange of experience and a constructive learning process.

Time	Four Phases			
	Phase 1- IDENTIFYING A CRITICAL INCIDENT	**Phase 2 - PRESENTING THE CRITICAL INCIDENT**	**Phase 3 - DISCUSSING THE CRITICAL INCIDENT**	**Phase 4 - SUMMARY**
Task	Learners identify an incident from their workplace which they consider significant to their roles as professionals.	Learners **describe this incident** in terms of what, when, where and how it happened. Learners identify the **special attributes** or aspects of this incident that set it apart from all the others in their experience Learners reflect on what happened to them in terms of their **learning gain** as professionals	In each group, learners are invited to discuss and comment on the Critical Incidents described by the other members of the group	Elaboration (and possible formalization in a Learning Log) of a 'summary reflection'
Team	Individual learner	Small groups of students (from 3 to 8 members)	Small groups of students (from 3 to 8 members)	Individual learner
Classroom organization (F2F)	This phase can be carried out in the classroom or at home. A Learning Log template can be distributed to support the process, in digital or printed format.	Chairs should be placed in order to support interaction. If Learning Logs are available, they should be projected or shared though printouts.	Chairs should be placed in order to support interaction. If Learning Logs are available, they should be projected or shared though printouts.	This phase can be carried out in the classroom or at home.
Needed technologies (online)	A digital template of the Learning Log should be shared by the teacher/trainer Then, the learner should work individually to fill it in.	A formalization of the description in a digital Learning Log is advised. Then Learning Log could be shared through a "file sharing area". Additionally, the presentation of critical incidents can be performed synchronously through a Web-	A formalization of the description in a digital Learning Log is advised. Then Learning Log could be shared through a "file sharing area". The discussion of critical incidents can be performed synchronously, through a Web-conferencing system,	The digital template of the Learning Log should be completed by the student and shared with teacher/trainer and the other learners via the "file sharing area".

		conferencing system.	or asynchronously, through a forum of discussion.	

ADDITIONAL HINTS AND COMMENTS

Articulation of one's thoughts or externalisation of one's ideas enable reflection, promote conceptual refinement, and a deeper understanding of the knowledge base. To facilitate genuine reflection, teachers must make time for it and then guide the learners' efforts until they become comfortable with the process and its benefits.

The formalization of a Learning Log document could support both the sharing of the experience and the learner assessment; as a matter of fact, Learning Logs are an increasingly popular mode of assessment, since they record learning, experience and reflection. They also provide the teacher with valuable information on students' learning and any gaps that may need to be addressed.

Examples in NECTAR context

The Critical Incident analysis can be widely used in the context of NECTAR's GCE Curriculum, especially when the course targets already working cooks and chefs getting a specialization in CGE.

The identification of critical incidents can be "guided" and "focused" on a specific context or topic (e.g. the identification of the proper suppliers, the interaction with other professionals, the management and coordination of kitchen staff or the proper assessment of the users' needs) or may allow the discussion of experiences on different topics. Generally, it is advisable to adopt such a technique in order to address a specific Learning Outcome, or a set of LOs corresponding to a Core Competence, such as "*to work in a person-centred interprofessional healthcare team and collaborate with other professionals or stakeholders*" and thus addressing students to identify the critical incident in a specific context of work.

Below a possible example of a template for Learning Log supporting Critical Incident analysis and an example of the same template filled in by a nursing student are presented.

An example of a template for Learning Log

PHASE ONE – Identifying Critical Incident
This log identifies a critical incident which occurred…
PHASE TWO – Presenting the Critical Incident
…….
PHASE THREE – Discussing Learning Log
…….
PHASE FOUR – Summary: Making the Connection Between Theory and Practice
Thanks to this reflection, I was able to ……

An example of Learning Log in the context of nursing training drawn from Naidu & Oliver (1999)

PHASE ONE – Identifying Critical Incident

This log identifies a critical incident which occurred whilst managing the post operative (post-op) pain of two female surgical patients. The use of Patient Controlled Analgesia (PCA) in the control of post-op pain has been analysed and compared for effectiveness amongst the two patients. This reflection which is viewed as "reflection-in-action" aims to increase my knowledge, and share findings about the nurse's role in the assessment and management of surgical patients using PCA

PHASE TWO – Presenting the Critical Incident

The introduction of PCA to the surgical arena was generally well received by nursing staff however on this particular day we were all a bit sceptical about its usefulness in controlling pain. Following a team meeting it was decided that we would observe the efficacy of PCA for a week and debrief at the following team day.

When we assessed patients such as Mrs G and Mrs H it appeared that they were both responding to the PCA in different ways. They both had abdominal hysterectomies and were of similar age. Mrs G appeared to be comfortable with her pain relief and seemed to be "coping quite well" post op. She had a good family support system and was in control of her recovery. However, Mrs H who had been quite anxious about surgery was not a happy patient. She was quite stressed and angry that she had to use a machine as if she was an "addict". The PCA team had assessed Mrs H pre op and recommended that she be placed on PCA. The collaboration between the PCA team (made up of a Surgeon and one PCA Clinical Nurse Consultant (CNC)) and the ward nurses had not been effective in the case of Mrs H. Prior to surgery Mrs H was reported by nursing staff to be anxious and needing reassurance about her surgery. She was also described as requiring extra TLC. If the psychological state of this patient had been explored, she may not have been a candidate for PCA. At the end of the day nurses concluded that they had a major role to play in the criteria being set by the PCA team for the selection of PCA patients. A new protocol was written up in the hope that nurses would be empowered to apply their knowledge and make a difference in the application of PCA.

PHASE THREE – Discussing Learning Log

It is generally agreed that PCA is more effective than the traditional methods of postoperative pain control but not automatically so. The choice of opioid, the settings chosen for demand dose and the lockout interval will greatly influence the effectiveness of this method of analgesia. Psychological variables are also important in predicting the efficacy of PCA. In the situation described above, it was concluded that Mrs H's pain was not well controlled by PCA however Mrs G's pain was. The question was how could we have managed Mrs H's pain effectively within the nursing process framework? Firstly nurses relied solely on a piece of technology to deliver pain relief without assessing Mrs H's psychological coping mechanisms and support system within her environment. Newmans's model focuses on patient care within a system in this case the lack of family/friends support should have alerted nursing staff that Mrs H would need further support and reassurance in terms of PCA. Roy's adaptation model could be applied here as well to explain the adaptation of Mrs G to the new environment. On the other hand, Mrs H was not able to cope with her new environment. She was constantly complaining about not being "helped". Orem's self care model needed to come into action and we needed to demonstrate how we wanted Mrs H to take responsibility for her pain relief by using the PCA device. Had she been able to do this on her own, her fatigue and lack of sleep would have been minimised and she could have started to "take care of herself" and hopefully feel in control. Another way to manage Mrs H could have been to complement PCA with alternative pain relief such as distraction measures and/or aromatherapy. PCA was as effective as the preloaded prescription perhaps a higher dose of opiads would have been more effective for Mrs H due to her low pain threshold. For example it has been found that some patients are unable to maintain an increased demand rate if the demand dose is small (Lechman et al., 1986). I guess from this research it is safe to say that not even PCA could overcome the deficiencies of a poor prescription. In addition a more effective education method could have ensured that the patient was confident about PCA and would not hesitate to use PCA as often as needed. On the other hand she could have been determined as not suitable for PCA and had traditional IM analgesia for pain relief.

PHASE FOUR – Summary: Making the Connection Between Theory and Practice

From this reflection I was able to change my perception about the effectiveness of PCA. The literature researched as part of this exercise confirms that PCA is an effective pain relief measure when all components of pain management are taken into consideration. The effectiveness of PCA appears to depend on continuos analgesia and/or the perception of personal control. PCA as a method which hands over the control of pain to the patient has been shown to reduce pain after surgery substantially (Graves, 1983; Notcutt, 1990).

The psychological factors associated with the effectiveness of PCA have also been researched. With respect to PCA Johnson et al. (1988), measured locus of control, with the Multidimensional Health Locus of Control Inventory (MHLC) among female patients undergoing abdominal gynaecological operations. The results showed that those with an external locus of control experienced higher pain scores and a greater degree of dissatisfaction with PCA. Thus, the author suggests that if a patient does not acknowledge a degree of personal control and responsibility for own health, allocation to a PCA regime may prove less beneficial than more conventional methods.

Coping styles, locus of control and level of anxiety form part of the patient's behavioural assessment which nursing staff need to take into account when deciding on the benefits of PCA. However, PCA requires full patient cooperation and participation and hence education from nursing staff and allied personnel is also a major factor in its efficacy.

REFERENCES

This training pattern has been drawn and adapted from:

Naidu, S., & Oliver, M. (1999). Critical incident-based computer supported collaborative learning. Instructional Science, 27(5), 329–354. https://doi.org/10.1023/A:1003261515141

Other references are:

Friesner, Tim & Hart, Mike. (2005). Learning Logs: Assessment or Research Method?.

Ip, A., Morrison, I. (2002). *Learning Objects in different pedagogical paradigms*, Educause in Australasia, 2002. In Internet, URL: http://users.tpg.com.au/adslfrcf/lo/LO[ASCILITE2001].pdf

Lave, J. & Wagner, E. (1991). Situated Learning: Legitimate Peripheral Participation. New York: Cambridge University Press.

Parker DL, Webb J, D'Souza B. The value of critical incident analysis as an educational tool and its relationship to experiential learning. Nurse Educ Today. 1995 Apr;15(2):111-6. doi: 10.1016/s0260-6917(95)80029-8. PMID: 7731432.

Walters, J., Seidel, S. & Gardner, H. (1994). Children as reflective practitioners: Bringing metacognition to the classroom. In J.N. Mangerieri & C. Collins Block, eds, Creating Powerful Thinking in Teachers and Students: Diverse Perspectives, pp. 289–303. Orlando: Harcourt Brace.