Article

Qualitative Content Analysis: A Case Study of a Malaysian Government Education Website

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Abstract— Content analysis is a set of qualitative methods utilized to analyse data from verbal, print or electronic communication channels. Text-based information from interviews, focus groups and open-ended survey questions can be evaluated using this method. This paper shall put forth the definition of qualitative content analysis and discuss the basic principles of its technique. The method for conducting qualitative content analysis research will then be outlined and explained. A case study of a Malaysian government education website is provided to demonstrate the application of the said method. The case study explores several critical success factors (CSFs) involved in the transfer of knowledge from the Government to targeted users via an education-based website. Fifteen interviews were conducted and 14 CSFs are identified and segregated into six thematic groups. This exercise shall provide practical guidance to the practitioners that are directly involved in the process. The identification and understanding of the CSFs would provide the much needed direction for the website administrators and content creators. They would have access to essential information that enable them to make strategic decisions related to their website's content development and delivery activities. This would then enhanced their capacity to deliver the requisite knowledge to their targeted users.

Keywords— Content analysis; critical success factor; interview; qualitative data analysis; website.

I. INTRODUCTION

Qualitative content analysis is commonly used for analysing qualitative data. It is research method that is widely used in many areas such as Information Systems, Health studies and many more [1], [2]. It is a flexible method to analyse data from verbal, print, or electronic communication channels. Text-based information from interviews, focus group and open-ended survey questions can be evaluated using this method. The purpose of article is to present the process and application of a qualitative content analysis. This approach was used to identify critical success factors (CSFs) involved in the transfer of knowledge from the government to targeted users via an education-based website.

Content analysis begins with the use of symbols and language [3]. The method was primarily restricted to counting words or phrases [4], [5]. At present time, it is widely accepted that "content analysis is a research method that provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena" [3].

Content analysis is applicable not only in the process of quantifying things but is also involved in the interpretation of meanings, intentions, consequences and context [3], [6]. The contextual environment is put into consideration in order to describe the occurrences of words, phrases or sentences [3], [6]. This method can be used to reveal and identify the focus of an individual, groups, institutional establishment or societal attention; to determine the psychological states of persons or groups; to reflect cultural patterns and beliefs; to describe themes, trends, goals or other characteristics in communication content; to analyse open-ended survey data; and many more [3], [5], [7]-[10]. Regardless of the purposes, the main objectives of content analysis is to enhance the understanding of the data that describes the phenomena [3], [11]-[13].

The following sections provide an overview of the data collection and analysis processes employed in this research. The notes presented outline the analysis that is conducted for the following activities, namely, The CSF Introductory Workshops, the CSF Interviews (including a sample of the content analysis undertaken), CSF Focus Groups and Document Analysis.

II. CSF INTRODUCTORY WORKSHOPS

The objective of the introductory workshops is to explain the research purpose and processes to the Government representatives and establish initial contact with the case study websites. During the meeting, detailed notes were taken to ensure proper documentation of the exercise. They addresses critical matters involved including the identification of the websites that meet the requirements of the researcher. The agenda of the introductory workshops that comprise of the list of information and requirements from the Department are: (a) Recommendation for the names of officers to participate in the research, which requires approximately 15-20 respondents. They should include directors, managers, advisory team, content creators, website host management officers, web programmers, designers and others involved in the development and management of the website. (b) Suggestions in terms of the specific areas of the website that the researcher should focus on and examine. They would serve as a guide in identifying the information and services available on the department's website. For example, is it used as a service-based website, a knowledge-based website, and others? (d) Suggestions and identification of key documents that are used by the department for the development and management of the website. They will assist the researcher to understand the policies and guidelines that have been implemented by the department in regards to the overall website maintenance.

The notes from the introductory workshops were subsequently used by the researcher to contact the nominated respondents and undertake the preliminary reading in preparation for the next stage of the exercise, the CSF interview programme. During the meeting, which lasted approximately 45-60 minutes, 15 respondents from the Malaysian Education Department (referred to in this paper as MASED) were recommended by the contact official to participate in the CSF interviews. The details given by the contact official on the participants are as follows. The individual coding numbers were assigned by the researcher to the participants for easy identification. (1) PM10: Director ICT, General Management Information Management Division (Top Management Level), (2) PM15: Director, General Education Operations Public School Management (Top Management Level), (3) PM12: Chief Assistant Director ICT, General Management Information Management Division (Middle Management Level), (4) PM13: Chief Assistant Director ICT, Matriculation Division (Middle Management Level), (5) PM5: Assistant Director ICT, General Policy & Educational Development Educational Planning & Research (Middle Management Level), (6) PM4: Chief Assistant Director ICT, General Education Operations Public School Management (Middle Management Level), (7) PM7: Assistant Director ICT, General Education Operations Public School Management (Middle Management Level), (8) PM8: Assistant Director ICT, General Education Operations Public School Management (Middle Management Level), (9) PM1: Assistant Director ICT, General Education Operations Sports, Arts & Co-Curriculum (Middle Management Level), (10) PM6: Chief Assistant Director ICT, General Professional Development Teacher Education (Middle Management Level), (11) PM11: ICT Officer, General Management Information Management Division (Operational Management Level), (12) PM14: Assistant ICT Officer, Matriculation Division (Operational Management Level), (13) PM9: Senior Coordinator ICT, General Education Operations Public School Management (Operational Management Level), (14) PM2: Assistant ICT Officer, General Education Operations Sports, Arts & Co-Curriculum (Operational Management Level), and (15) PM3: ICT Officer, General Education Operations Special Education (Operational Management Level).

III. CSF INTERVIEWS

Prior to the interviews, a (A) pre-interview preparation schedule and (B) an interview schedule was emailed to each respondent. The pre-interview preparation schedule is given to the respondents as to explain on the research topic and the operation terms so that the respondents have the idea on the research. Whereas, the interview schedule is given to the respondents as to ensure that they are adequately prepared to participate actively and provide useful information during the interview. The pre-interview preparation schedule and the interview schedule are as follows.

A. Pre-Interview Preparation Schedule

The pre-interview preparation schedule consists of six items. The first item is the CSFs for Knowledge Transfer via Government Websites – Constructing an Initial List of CSFs: The aim of the following questions is to prepare an initial list of CSFs for knowledge transfer via Government websites. The questions will be based on the four stages of knowledge transfer.

The second item is the CSFs for Knowledge Transfer via Government Websites: CSFs are "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation" [14]. This research will identify the key factors that are important to the organisation and should be implemented to ensure an effective transfer of knowledge between or among individuals, teams, groups or organisations [15]. The process has four stages, namely, initiation, implementation, ramp-up and integration [16]. This research will identify the CSFs for each of these stages.

The remaining four items are related to the questionnaire. The details are as follows. This questionnaire has four questions only. Please answer all questions either in English or Malay. You can use as much space as you require. Thank you for your participation in this research.

The third item is the Stage 1: Initiation. The initiation stage consists of all events that lead to the decision to transfer knowledge. The stage begins when the recipient recognises a need for knowledge and commences on a search to fulfil that particular need. For example, audit forms are made available on the public website for teachers to use to evaluate the curriculum of a particular programme *(Sebagai contoh, borang audit boleh didapati melalui laman web utama untuk digunakan oleh para guru dalam menilai kurikulum sesuatu program di sekolah)*. Once the need for the information is identified, the feasibility of offering a platform for knowledge transfer is explored. Based on your experience as an IT practitioner, what are the CSFs for

knowledge transfer from the Department to the targeted users via the websites during the initiation stage?

The fourth item is the Stage 2: Implementation. The implementation stage commences when a decision to proceed is made. During this stage, the knowledge resources flow or are transferred from the source to the recipient and social ties are established. For example, the audit form is downloaded from the public website *(Sebagai contoh borang audit dimuat turun daripada laman web utama)*. The activities related to the implementation stage ends when the recipient utilized the transferred knowledge. Based on your experience as an IT practitioner, what are the CSFs for knowledge transfer from the Department to the targeted users via the websites during the implementation stage?

The fifth item is the Stage 3: Ramp-up. The ramp-up stage commences when the recipient starts using the received knowledge. During this stage, the recipient is concerned with identifying and resolving any unexpected problems that may arise. For example, teachers are using the downloaded audit form to evaluate the current curriculum of a particular programme to plan for the future curriculum *(Sebagai contoh, guru menggunakan borang audit tersebut untuk menilai kurikulum terkini bagi merancang kurikulum yang seterusnya)*. Based on your experience as an IT practitioner, what are the CSFs for knowledge transfer from the Department to the targeted users via the websites during the ramp-up stage?

The sixth item is the Stage 4: Integration. The integration stage commences after the recipient achieves satisfactory results after the utilization or implementation of the transferred knowledge. The use of the transferred knowledge is expected to be a routine. Integration is complete when the previous knowledge is replaced by the latest transferred knowledge or practices. For example, teachers continue to refer to the public website for other needs *(Sebagai contoh, guru menggunakan laman web utama untuk keperluan yang lain)*. Based on your experience as an IT practitioner, what are the CSFs for knowledge transfer from the Department to the targeted users via the websites during the integration stage? Thank you for taking the time to complete these questions.

B. Interview Schedule

The interview schedule consists of four items. The first item is the profile of interviewee. The profile of interviewee includes the following: (i) what is your position in the organisation? (ii) How long have you been in your current position? (iii) What are your job tasks?

The second item is the government website. The government website includes the following: (i) what organisational objectives does the website seek to address? (ii) What is your opinion of the current performance of the website with respect to the objectives? (iii) Why do you think this is the case? Please elaborate on the opinion given. (iv) Who are the targeted customers or users of the website? (v) For what purpose(s) do external users access the website? (vi) For what purpose(s) do internal users access the website? (vii) Does the website currently operate according to the objectives that you have stated? (viii) Why do you think this is the case? Please elaborate on the opinion given. (ix) This research will classify the maturity level of Government websites using a four-stage model which encompasses the Informative, Interactive, Transactional, and Integration stages. Please refer to the guideline below. In your opinion, what is the current maturity level stage of the government website that you manage? (x) Why do you think this is the case? Please elaborate on the opinion given.

The third item is the guideline for the maturity level of government websites. There are four maturity level of government websites. Stage 1: Informative – Static web page, one way external communication and launch intranet development. Features include web page, online advertising, e-mail, passive, catalogue-like information, basic internal administrative processes such as payroll and accounts. Stage 2: Interactive – Bidirectional communication and simple administrative tasks online. Allows for a starting e-democracy and full intranet development. Features include forum, frequently asked questions (FAQs), files and forms download, links and search engines and enterprise resource planning (ERP) system deployment. Stage 3: Transactional – Bidirectional communication and added value operations (money or sensitive information). Internal process re-engineering. Launch customer relationship management (CRM) system. Develop business strategies and full legacy systems integration. Features include high security measures, e-vote, e-banking, debts, taxes and licenses online, official certificates and e-procurement. Stage 4: Integrational – Seamless administration and interoperability in the provision of public services. Horizontal and vertical cooperation. Develop communities. Exploitation of CRM systems and knowledge management (KM) systems deployment. Features include intranet and extranet, integrated information systems (IS) between organisations, high security measures, real-time file traceability and secure information exchange devices.

The fourth item is the questions for CSFs for knowledge transfer via government website, based on knowledge transfer stages: initiation, implementation, ramp-up, and integration. The questions in Stage 1: Initiation includes the following: (i) in no particular order, please tell us what you consider as the CSFs for knowledge transfer by means of the government websites in the initiation stage? (ii) Why do you believe that these factors are important? (iii) What are the mechanisms used to ensure that the identified CSFs are achieved? The questions in Stage 2: Implementation includes the following: (i) in no particular order, please tell us what you consider as the CSFs for knowledge transfer by means of the government websites in the implementation stage? (ii) Why do you believe that these factors are important? (iii) What are the mechanisms used to ensure that the identified CSFs are achieved? The questions in Stage 3: Ramp-up includes the following: (i) In no particular order, please tell us what you consider as the CSFs for knowledge transfer by means of the government websites in the ramp-up stage? (ii) Why do you believe that these factors are important? (iii) What are the mechanisms used to ensure that the identified CSFs are achieved? The questions in Stage 4: Integration includes the following: (i) in no particular order, please tell us what you consider as the CSFs for knowledge transfer by means of the government websites in the integration stage? (ii) Why do you believe that these factors are important? (iii) What are the mechanisms used to ensure

that the identified CSFs are achieved? Thank you for your participation in this research.

IV. CONTENT ANALYSIS

The interviews were taped recorded. Then the interviews were transcribed and analysed according to the following steps [17]: (A) Read through all transcripts. (B) Code the data by assigning category names that emerge from the transcripts and provide descriptions. (C) Merge similar categories to form primary categories and provide descriptions. (D) Check categories against literature to support or challenge the categorisations. (E) Group the categories to form themes. (F) Review/Interpret themes. The transcript content analysis, which is illustrated with fragments taken from the analysis notes, is as follows.

A. Step 1: Read Through All Transcript

Following a reading of the transcripts, statement were identified as possibly being related to factors that are critical to the knowledge transfer success. Some samples include: *"We do a lot of advertising as well to get our website out there. We mention it in virtually everything that we put out – our website is on there. So we've got high awareness of our website and the search engine." "We have to make sure that information really is easily found." "Being clear about what you want them to do. So I can tell you clearly, you need to do this, in order to get this, by this time." "We advertise when there is new stuff and whenever we are talking about one thing and it is relevant we mention it again, face-to-face."*

B. Step 2: Code the Data by Assigning Category Names that Emerge from the Transcripts and Provide Descriptions

The following illustrates the recording of four identified transcript statements. They are listed as a Transcript Statement. Each transcript is tagged for identification (see Transcript Code) using a coding systems as follows: Example: 'S1_PA1_CSF 2.' The meaning of each code is as follows: 'S1' is the respondent cited this statement when discussing knowledge transfer Stage 1 (Stage 1 – Initiation, Stage 2 – Implementation, Stage 3 – Ramp-up, and Stage 4 – Integration). 'PA1' is the respondent offering this response was "Participant AUSED 1." The respondents' codes have been listed as in the sub-title II for MASED. 'CSF 2' is the sequential numbering system to facilitate unambiguous identification of transcript statements.

The following presents the code for each transcript statement as in sub-title IV (A). (1) Transcript Code: S1_PA1_CSF 2, Senior Online Editor, Transcript Category and Definition: Advertising and awareness [18], promotion should be undertaken to raise the level of awareness amongst potential users of the site, its content and functionality. Transcript Statement: "We do a lot of advertising as well to get our website out there. We mention it in virtually everything that we put out – our website is on there. So we've got high awareness of our website and the search engine." (2) Transcript Code: S2_PA1_CSF 24, Senior Online Editor, Transcript Category and Definition: Usability – Findability [18], the website should be developed to provide users with functionality that will support them during the process of locating the required knowledge resources efficiently and effectively. Transcript Statement:

"We have to make sure that information really is easily found." (3) Transcript Code: S3_PA1_CSF 40, Senior Online Editor, Transcript Category and Definition: Customer focus: Understand the needs of recipient – Content quality [18], the website content should be prepared with the recipient in mind, is easily understandable and includes the choice of meaningful language. Transcript Statement: "Being clear about what you want them to do. So I can tell you clearly, you need to do this, in order to get this, by this time." (4) Transcript Code: S4_PA2_CSF 53, Web Specialist, Transcript Category and Definition: Advertising and awareness [18], promotion should be undertaken to raise the level of awareness amongst potential users of the site, its content and functionality. Transcript Statement: "We advertise when there is new stuff and whenever we are talking about one thing and it is relevant we mention it again, face-to-face."

Drawing upon each of the respondent's statements, the researcher was able to generate an associated description/definition. A "Transcript Category" is then assigned, drawing upon the concepts/groupings and associated literature which includes any specific references identified as explicitly relevant to the assigned transcript category.

C. Step 3: Merge Similar Categories to Form Primary Categories and Provide Descriptions

The following illustrates the recording of the merger of various transcripts categories to form the primary categories. Entries with identical or nearly identical transcript categories in Step 2 were grouped and/or merged. This is illustrated below for transcript statements that are assigned to the transcript category of 'Advertising and Awareness'. As shown below, transcripts with Transcript Codes S1_PA1_CSF 2 and S4_PA2_CSF 53 were suitable candidates for a merger. The association of these categories with the knowledge transfer stages are recorded. Finally, a new code and name were assigned to the merged category. The new code is specified as follows: 'MAS_CSF 1': 'MAS = MASED, 'CSF 1 = sequential numbering system to facilitate future CSF identification.

New Category: MAS_CSF 1 – Awareness and notification. This new category is derived from the following two transcript codes, transcript categories and participants: (1) Transcript Code, Transcript Category and Participant: PA1_CSF 2, Advertising and awareness, and Senior Online Editor. Definition: Promotion should be undertaken to raise the level of awareness amongst potential users of the site, its content and functionality. Transcript Statement: "We do a lot of advertising as well to get our website out there. We mention it in virtually everything that we put out – our website is on there. So we've got high awareness of our website and the search engine." Association of Knowledge Transfer Stages: Stage 1 – Initiation. (2) Transcript Code, Transcript Category and Participant: PA2_CSF 53, Advertising and awareness, and Web Specialist. Definition: Promotion should be undertaken to raise the level of awareness amongst potential users of the site, its content and functionality. Transcript Statement: "We advertise when there is new stuff and whenever we are talking about one thing and it is relevant we mention it again, face-to-face."

Association of Knowledge Transfer Stages: Stage 4 – Integration.

D. Step 4: Check Categories Against Literature to Support or Challenge the Categorisations

The researcher conducted a review of the merged categories in Step 3 against the extant literature, paying particular attention to the references noted in Step 2. The objective is to ensure that they support or challenge the categorisations. When a review raised questions about the categorisation, a re-coding at Step 2 was made until a satisfactory set of CSF categories was achieved.

E. Step 5: Group the Categories to Form Themes

Each identified candidate's CSF was considered against the groupings of concepts and associated literature. They are then assigned to a specific CSF theme. The results of these considerations are illustrated as follows: (1) Theme 2 – User focus. (i) MASED Code and MASED Category: MAS_CSF 1, Awareness and notification. Transcript Code and Transcript Category: S1_PA1_CSF 2, Advertising and awareness. (ii) MASED Code and MASED Category: MAS_CSF 8, User positive experience. Transcript Code and Transcript Category: S4_PA3_CSF 54, Positive experience. (2) Theme 5 – Technology focus. (i) MASED Code and MASED Category: MAS_CSF 7, Information and communication technology (ICT) infrastructure. (a) Transcript Code and Transcript Category: S2_PA5_CSF 32, Technology availability. (b) Transcript Code and Transcript Category: S2_PA7_CSF 34, Technology functionality.

F. Step 6: Review / Interpret Themes

The final step is the review of the identified themes with the aim of establishing that they are indeed in accordance to the thrust of the original interview transcripts. If needed, earlier steps were retraced in order to re-categories / redefine the CSFs.

An additional step to establish the priority placed by the respondents on each CSF at every knowledge transfer stages is implemented. This involved the reintegration of the interview transcripts to identify the CSFs cited at every knowledge transfer stages. The results are as follows. For example, the results indicate that respondent PA1 has identified MAS_CSF 1 is important in Stage 1 and MAS_CSF 2 is important in Stage 2. (1) MASED Code and MASED Theme – Category: MAS_CSF 1, User focus – Awareness and notification. Transcript Code and Transcript Category: PA1_CSF 2, Advertising and awareness. Transcript Statement: "We do a lot of advertising as well to get our website out there. We mention it in virtually everything that we put out – our website is on there. So we've got high awareness of our website and the search engine." Association of knowledge transfer stages: Stage 1 – Initiation. (2) MASED Code and MASED Theme – Category: MAS_CSF 2, User focus – Usability: Functionality and navigation. Transcript Code and Transcript Category: PA1_CSF 24, Usability – Findability. Transcript Statement: "We have to make sure that information really is easily found." Association of knowledge transfer stages: Stage 2 – Implementation.

Based on the interview transcripts, the researcher was able to code the answers to questions concerning the feedback mechanisms used to assess the success of the website as a vehicle for knowledge transfer. In this case, the respondent's statements were directly coded to the emerging groupings of the feedback mechanisms categories. The transcript statements highlighted below, drawn from an interview with respondent from MASED that is PM3 – ICT Officer, provides a good illustration. The first was coded to be potential CSFs, while the second was identified to be related to an emerging feedback mechanism ('Self-checks').

The Transcript Statement from the Respondents: PM3 – ICT Officer. "The interface has to be friendly. The links should be directed according to the title" (MAS_CSF 2 – Usability: Functionality and Navigation). An officer is assigned to double-check the website on a weekly basis and provide feedback on its condition" (Feedback Mechanism: Self-checks).

V. CSF FOCUS GROUPS AND DOCUMENTS

Audio recordings of the focus groups were transcribed. Analysis of the transcripts, applying the content analysis techniques discussed above, was undertaken. The focus group transcript analysis was conducted in reference to its agenda to identify CSFs that should combined, eliminated or restated.

In addition to the extensive academic literature reviewed, documents related to the operation of the case study sites were also made available. They include hardcopy related to site operation and direct online access to the public education websites of MASED [19].

The websites were analysed as sources of information, knowledge channels and service providers for each identified stakeholder (citizens, business, other government agencies and employees). Documents related to the operation of the case study sites were reviewed to confirm statements on knowledge transfer processes and other matters which were raised during the interviews and focus groups.

VI. RESULT AND DISCUSSION

From one-to-one interviews, respondents identified 14 CSFs for knowledge transfer via Malaysian government website. Six themes were emerged from the categories, namely management role, user focus, employees focus, content focus, technology focus and organisational culture.

MASED staff argued that the leadership role is important for the management role theme, in order to encourage usage of the website and to enforce rules and regulations pertaining to its operation. Leadership is needed to explain, create awareness and support the government website development project before, during, after implementation, and throughout ongoing operation.

Respondents from MASED raised awareness and notification, usability, understand the needs of recipient, and presentation of knowledge for the user focus and employee focus theme. Respondents from MASED further added that they also need to consider the different levels of users' ICT

literacy in order to prepare content and to design appropriate knowledge presentation. MASED staff also pointed out the importance of providing support training to assist users to access knowledge resources efficiently. MASED staff highlighted the importance of addressing developer staff capability issues, specifically related to staffing levels, and awareness and understanding of job tasks. Refer to Table I for the final list of the CSFs for knowledge transfer via Malaysian government website [20].

TABLE I
CSFs FOR KNOWLEDGE TRANSFER VIA MALAYSIAN
GOVERNMENT WEBSITE

CSFs MASED
Management role theme
• **Leadership**
User focus theme
• **Awareness and notification**
• **Usability: Functionality and navigation**
• **User focus: Understand needs of recipient**
• **Presentation of knowledge**
• **User ICT literacy: Awareness**
• **Education, training and knowledge sharing**
Employee focus theme
• **Employee focus**
Content focus theme
• **Content**
Technology focus theme
• **Accessibility**
• **ICT infrastructure: Availability and functionality**
• **Interactive platform**
• **Security**
Organisational culture theme
• **Attitude and change management**

For content focus theme, respondents from MASED explicitly raised issues surrounding content, with specific shared references to it being current, accurate, relevant and meeting users' requirements. Further, both raised the importance of informing users of update schedules.

Respondents from MASED raised issues that they referred to as "accessibility" and "ICT infrastructure" as important to achieving knowledge transfer via government website for the technology focus theme. In the case of accessibility the CSFs were tentatively cast as equivalent and taken to the focus groups. There were, however, differences in emphasis that indicated that the ICT infrastructure issues raised should not be treated as equivalent. In the area of ICT infrastructure, MASED staff placed emphasis on the availability and functionality of the infrastructure. MASED staff also mentioned that the website should constitute an interactive platform for users to provide suggestions for improvement.

For organisational culture focus theme, respondents from MASED raised attitude and change management as a critical factor. MASED staff stated that user organisations should be committed to change to new ways of working, informed by the website. Also, they expresses concern about security of the website, arguing that users' perceptions of security could colour their trust of the knowledge resources delivered.

VII. CONCLUSIONS

This paper illustrates a qualitative content analysis approach of CSFs for knowledge transfer from government sources to internal and external stakeholders, specifically via an educated-based website operated by the Malaysia Government. The analysis was drawn upon interviews with key Malaysia government respondents. It should be noted that this study, built upon a single case of an educational agency of the Malaysian government, may not necessarily be applicable to other contexts (i.e. educational agencies of other national governments and/or other forms of government agency).

In this paper, qualitative content analysis is defined and the basic principles of data analysis technique are discussed. The method for conducting qualitative content analysis research is outlined, explained and an example is provided. The identifying and understanding of the CSFs has the capacity to provide practical guidance to practitioners. It would allow them to identify and understand the CSFs and their impact on the various stages of knowledge transfer. This can also assist the government website providers in making decisions related to the internal operation of their content development and delivery activities. They would be able to enhance their capacity in delivering the requisite knowledge to their website users. It must be noted that the CSFs proposed are considered by the respondents of the study to be necessary for success, but that there should not necessarily be considered sufficient for success.

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