

Instructional Design Practitioners in Malaysia: Skills and Issues

Irfan N. Umar and Yong Su-Lyn

Abstract—The purpose of this research is to determine the knowledge and skills possessed by instructional design (ID) practitioners in Malaysia. As ID is a relatively new field in the country and there seems to be an absence of any studies on its community of practice, the main objective of this research is to discover the tasks and activities performed by ID practitioners in educational and corporate organizations as suggested by the International Board of Standards for Training, Performance and Instruction. This includes finding out the ID models applied in the course of their work. This research also attempts to identify the barriers and issues as to why some ID tasks and activities are rarely or never conducted. The methodology employed in this descriptive study was a survey questionnaire sent to 30 instructional designers nationwide. The results showed that majority of the tasks and activities are carried out frequently enough but omissions do occur due to reasons such as it being out of job scope, the decision was already made at a higher level, and the lack of knowledge and skills. Further investigations of a qualitative manner should be conducted to achieve a more in-depth understanding of ID practices in Malaysia.

Keywords—instructional design, ID competencies, ID models, IBSTPI

I. INTRODUCTION

INSTRUCTIONAL design (ID) as a field of practice began to make its way into the education and training sectors in Malaysia around the mid 1990s. The demand for qualified and experienced instructional designers has since grown and is still on the rise. However there is no official record of the number of instructional designers practicing in Malaysia. A few ID practitioners would have entered the field via formal university degrees, but most would have received training in their workplace, mainly in the form of on-the-job training, internal workshops, and mentoring.

In the United States of America, ID as a professional practice was established in the workforce several decades earlier. History indicated that the US military had employed ID methodologies to quickly train soldiers during World War II [1]. Since then, many ID theories and models have sprung up and everyone seemed to have a different opinion about what ID was. For this reason, the International Board of Standards for Training, Performance and Instruction (IBSTPI)

was formed and became the first organization to publish a set of competencies that address the knowledge, skills and attitudes of an ID practitioner.

There are numerous literatures written pertaining to the topic of instructional design. Many of the contents are academic in nature, focusing on ID theories and models, and the effectiveness of their implementation. It is safe to say that there is no lack of references and guidance on how to do instructional design. But are these ID models being applied in practice? Is there a discrepancy between what ID models suggest and what instructional designers actually do? Are the ID models flexible enough to meet practitioners' needs?

Only a handful of studies have been conducted to ascertain if ID theories and models are being practiced and even lesser that took into account the reality of the work environment. In 2005, [2] wrote a journal article based on their literature review to show evidences that instructional designers do apply ID models in their work, and to identify other activities and processes that might be used in their professional activities. However, they found only ten relevant articles, of which seven relate to empirical research and three were case descriptions.

One driving force for this research is the lack of data which proves that instructional designers in Malaysia do apply ID models in their work. Surveys and case studies have been conducted in the United States [3], [4], [5], Canada [6], Australia [7], [8] and even in neighbouring Singapore [9]. For instance, recently, [6] carried out a qualitative study to explore the unanticipated roles and skills instructional designers faced in their practice of ID. Although they admitted that their findings were not sufficient to make general and concrete conclusions, their research did provide evidence that instructional designers are expected to have a wider range of skills beyond the traditionally perceived ID competencies. In the Singapore study conducted by [9], 25% of the survey respondents have zero knowledge of ID or learning theories. This is indeed an alarming fact. It questions what instructional designers are using as the basis for their work. The same study indicated that the professional development framework was basically non-existent for instructional designers in Singapore.

The uncertainty of what instructional designers in Malaysia are doing when they create learning and training materials is a matter of concern as it affects how current and potential employers and instructional designer view the profession. Also very little is known about the problems and barriers that seem to hinder the growth of this field in Malaysia. No studies have yet to examine the practice of instructional design, in whatever forms, within Malaysia.

I. N. Umar is with the Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia (phone: 604-6535230 fax: 604-6576749; e-mail: irfan@usm.my).

S. L. Yong is with the Centre for Instructional Technology and Multimedia, Universiti Sains Malaysia (phone: 604-6535230 fax: 604-6576749; e-mail: sulyn.yong@gmail.com).

Thus, the aim of this research is to identify the knowledge and skills among instructional designers in Malaysia. In addition, this research attempts to identify the barriers and issues as to why some ID practices are not or rarely conducted by these designers. Therefore, several research questions have been designed to address these goals:

- i) Do instructional designers in Malaysia apply instructional design models in their work?
- ii) What are the tasks or activities that instructional designers in Malaysia perform when designing instruction and how often do they perform these tasks or activities?
- iii) What are the barriers or issues faced by instructional designers in Malaysia when they don't or rarely perform the instructional design tasks or activities?

II. RESEARCH METHODOLOGY

This study applied a quantitative descriptive survey. It sought to depict the practices that already exist among instructional designers in Malaysia. Due to the unknown numbers of instructional designers in this country, the participants were drawn from a list of known ID practitioners identified by the researchers using a convenience sampling. The study surveyed ID practitioners who are currently practicing or applying ID knowledge and skills into designing teaching, training or learning materials. A total of 30 invitations to participate in the survey were sent out via e-mail. The participants were from four higher educational institutions and ten corporate companies operating in Malaysia. The survey was carried out using a questionnaire and distributed to the participants.

The survey questionnaire consisted of three sections. The first section collected demographic details about the instructional designers. Questions asked include gender; age group; years of experience; organization sector; job title; number of instructional designers in the team; educational qualification level; formal study undertaken on ID; and training received on ID.

The second section measured the instructional designers' perception of ID practices. The survey questionnaire asked the instructional designers to identify and name ID models that they have used in their workplace. Ten popular ID models were listed in which the instructional designers could multiple select. In the third question of the second section, the instructional designers were asked to rate their agreement of the 23 competencies outlined by IBSTPI [11] on a 5-point Likert scale of (a) strongly disagree, (b) disagree, (c) not sure, (d) agree, and (e) strongly agree.

The third section required the instructional designers to identify the tasks and activities performed in their scope of work. These tasks and activities are identified as competencies as outlined by IBSTPI [11]. All 122 tasks and activities were listed in the survey questionnaire and grouped into four domains: 26 tasks and activities in the *Professional Foundations* domain, 30 in the *Planning and Analysis* domain, 32 in the *Design and Development* domain, and 34 in the

Implementation and Management domain. This section necessitates the instructional designers to indicate the frequency with which they apply the tasks and activities that they do. Frequency is rated in terms of *Always*, *Usually*, *Occasionally*, and *Never*.

In addition, the instructional designers needed to pick at least one reason as to why the tasks or activities were excluded or rarely performed. The reasons were adapted from those listed in a research conducted by [3], and these barriers or reasons were: (a) lack of knowledge and skills; (b) customer won't support; (c) decision already made; (d) perceived as unnecessary; (e) not enough time; (f) not enough money; and (g) out of job scope.

The drafted survey questionnaire was validated by two experts of instructional technology. After the validation, an additional reason, *Out of job scope*, was added into the last section of the questionnaire on why an ID task was excluded or rarely performed. A pilot test was then conducted to ascertain the validity and reliability of the survey questions. The drafted survey was tested with six instructional designers. From the pilot study, reliability analysis was conducted to check the consistency of the overall questionnaire. Reliability analysis was conducted on two subscales: Subscale 1 relating to the perception of what an instructional designer should do (Section B, Question 3), and Subscale 2 on the frequency of ID tasks and activities performed (Section C, Part 1). Both subscales appeared to have good internal consistency (Subscale 1, $\alpha = 0.897$, Subscale 2, $\alpha = 0.990$)

III. FINDINGS

Out of the 30 invitations, 22 survey responses were received, making the return rate to be 73%. The respondents were mainly female (17 individuals). Almost half of the respondents (45%) belonged to the age group between 30 to 34 years old. Then, 23% or 5 respondents are between 25-29 years old while 18% or 4 respondents are between 35-39 years old. Also, many of those who responded (64% or 14 respondents) had less than five years of experience in the ID field. Interestingly there is one respondent who indicated more than ten years of experience but none over 15 years, thus supporting the researchers' observation that the ID field in Malaysia may have only emerged around the mid 1990s. However, this data is not conclusive and further research should be carried out.

Also, 14 of the respondents (63.6%) were employed with a corporate company whereas the remainder eight (36.4%) practiced ID in four higher educational institutions in Malaysia. Many respondents (73%) stated *instructional designer* as their official job title in their organization. This indicates that both the educational and corporate sectors acknowledge the existence of this specific job role. The six other respondents are either *Consultant (Education Services)*, *e-Learn Developer*, *Technical Training Engineer*, *Learning Design Unit Head*, *Multimedia Technologist*, and *Senior Executive*. It was also observed that most respondents (18 people or 82%) worked in a team rather than alone. Some

worked in bigger teams of five or more ID practitioners while others worked in smaller teams.

Moreover, nine respondents (41%) earned a master's degree and the rest of the 13 respondents (59%) obtained at least a bachelor's degree. The survey did not ask in what discipline the participants had majored in. However, it required the participants to indicate if the field of study included the subject of instructional design, and it was found that nearly half of the respondents (45%) answered yes. Even though 55% of those responded did not receive a relevant degree qualification, all except one had been provided with some sort of ID training, whether formally via workshops and seminars, or informally through coaching from mentor, buddy help or internal documentations. Many (45%) had the benefit of both formal and informal trainings.

ADDIE, which is recognized by many as a generic model, is the ID model of the sample. 91% of the respondents had used *ADDIE* at some point in their practice. The next frequently used ID model is *Gagne's Nine Events of Instructions* (64%), followed by *Rapid Prototyping* (36%). Both *Keller's ARCS Model* and the *Learning Cycle* were utilized by six respondents, totaling 27% each. The *Dick and Carey Model* is ranked next in terms of ID models used at 23%. The *Waterfall Model*, although technically may not be considered as an ID model, was still drawn upon by three ID practitioners. Only one person had applied the *Morrison, Ross and Kemp Model*, and likewise the *Smith and Ragan Model*. Although there are many more ID models available, no respondent specified any other that was not in the given options.

Overall, the respondents performed all 122 of the ID tasks and activities listed in the IBSTPI competencies [11] but only at 82.9% of the time. Many of the tasks and activities were conducted most of the time (38.5% usually), followed by all the time (25.2% always), and then some of the time (19.2% occasionally). Only 17.1% of tasks and activities were never performed. The high frequency of tasks and activities being performed is comforting given that the ID field in Malaysia may be considered relatively "young".

In the *Professional Foundations domain*, the tasks and activities were "usually" performed (37.1%), followed by "always" performed (28.2%). Likewise, in the *Planning and Analysis domain* where majority of the tasks and activities were carried out either most of the time (43.0% usually) or all of the time (22.6% always). Again, it is the same in the *Design and Development domain* whereby a huge 69.5% of the tasks and activities were executed often enough (39.3% usually) if not at all times (30.2% always). The frequency of performance then differs slightly in the *Implementation and Management domain* in which the tasks and activities were mostly either "usually" (34.4%) or "never" (27.1%) done. Note that in all domains, "usually" is the most selected option for the ID tasks and activities.

The frequency "always" garnered the highest percentage value within the *Design and Development domain* (30.2%). Meanwhile, the frequency "usually" pulled in the highest percentage value within the *Planning and Analysis domain* (43%) whereas "occasionally" is often selected within the

Professional Foundations domain (23.8%). Respondents rated 27.1% of the tasks and activities within the *Implementation and Management domain* as "never" done. IBSTPI did not separate which tasks and activities belong to Implementation and which to Management. Therefore the research will not be able to draw a conclusion as to whether the ID practitioners in Malaysia are lacking in the Implementation phase, which is one of the five phases in the ADDIE model, or in the Management phase, which although not part of the ADDIE model is still an important portion in many other ID models such as the Kemp, Morrison, and Ross Model, the Seels and Glasgow ISD Model, and the Smith and Ragan Model.

For the tasks or activities that were rarely or never done, the respondents were also asked to identify the real barriers or reasons. Table I lists five tasks and activities that had the most number of barriers or issues as to why they were rarely or never performed.

TABLE I
ID TASKS WITH THE HIGHEST NUMBER OF ISSUES

Rank	Item	Barriers / issues							Total
		A	B	C	D	E	F	G	
1	C20	8	1	6	5	6	2	1	29
2	C32	3	0	10	2	1	0	11	27
3	C18	4	3	2	8	6	3	0	26
4	C115	2	0	6	2	2	3	11	26
5	C21	1	1	2	4	9	2	6	25

Note:

- C20 Use basic statistical techniques in needs assessment and evaluation
- C32 Complete a cost benefit analysis for recommended solutions
- C18 Use a variety of data collection tools and procedures
- C115 Establish systems for maintaining records and issuing reports of individual and group progress
- C21 Write research and evaluation reports

- A: Lack of knowledge and skills
- B: Customer won't support
- C: Decision already made
- D: Perceived as unnecessary
- E: Not enough time
- F: Not enough money
- G: Out of job scope

Using the basic statistical techniques in needs assessment and evaluation is the first task and activity that has the most barriers or issues as claimed by the respondents. Majority of them did not conduct this activity either because of lack in skill and knowledge (8 responses), the decision has already been made (6 responses), or they simply did not have enough time to conduct this task (6 responses). The next task or activity that has the most barriers or issues is *completing cost benefit analysis for recommended solutions*. The respondents either declared that the fact is out of scope (11 responses) or the decision has been made (10 responses).

Next, *using a variety of data collection tools and procedures* as well as *establishing systems for maintaining records and issuing reports of individual and group progress* are the tasks that have the third most barriers or issues that need to be tackled when designing any instruction. For the

former, two reasons were identified: (i) the task is perceived as unnecessary (8 responses) and (ii) not enough time (6 responses). For the latter task, out of job scope (11 responses) and decision has already been made (6 responses) are the two reasons identified by these respondents. Meanwhile, *writing research and evaluation reports* are rarely done by the respondents due to the 'not enough time' status (9 responses) and out of job scope (6 responses).

IV. DISCUSSION

The results of this study establish that ID practitioners in Malaysia do apply ID models in the course of their work. This is in contrast with the findings of [9] in which two of their respondents were unable to specify any ID theories or models. Among the ID practitioners in Malaysia, the lack of relevant education qualification and the scarcity of formal trainings do not diminish the importance of following a prescribed model in order to successfully deliver effective training and learning experiences. This is indeed a good sign for the ID profession in the country as it most likely means that elements of instruction are consciously taken into account and all parts relate to and support each other in the ID process.

Similar to [11]'s assumption, and also [3] findings, this research seems to indicate that there is not a single ID model that is relevant to all projects. Although ADDIE proved to be the most popular, not everyone has used it either. The reasons why a particular model was chosen were not explored in this study. There is a possibility that the decision of which model to be used was made at a higher level, perhaps by management or senior instructional designers. This should be an area for future research. Emphasis ought to be given into studying why ADDIE is so often the most popular ID model applied in projects.

In summary, ID practitioners in Malaysia do perform more than 80% of the tasks and activities listed by IBSTPI [11]. Generally, the ID practitioners execute most of the tasks within the *Professional Foundations, Planning and Analysis*, and *Design and Development* domains. However, more than a quarter of the tasks and activities in the *Implementation and Management* domain were never performed. Note that a majority of the ID practitioners follow the ADDIE model which does not have a management portion. Was that why many of the tasks and activities in the *Implementation and Management* domain were not carried out? This is definitely a call for a further and more thorough research and analysis to be conducted in order to accurately identify the exact tasks and activities performed within each sub-domain, e.g. an Implementation task vs. a Management task.

Although majority of the tasks and activities are carried out frequently, ID practitioners in Malaysia do sometimes omit certain tasks or activities in the course of their work due to a number of reasons. This is consistent with [3] research where more than 50% of their respondents reported performing common ID activities on a regular basis but yet left out one or more on every project. In this research, the main reasons for excluding a task or activity are (1) out of job scope, (2)

decision already made, and (3) lack of knowledge and skills. Two of these factors may be beyond the control of the ID practitioner but any barrier or issue can always be overcome.

In order to expand the ID profession, all practitioners, whether experienced or inexperienced, should be given increasing job scope and responsibilities within the organization. No doubt newcomers or inexperience instructional designers may have yet to possess the expertise to perform the advanced tasks or activities, but if they are not given the opportunities to learn and practice, then they will never acquire the knowledge or skills. Instead of assigning the task or activity solely to experienced practitioners, perhaps a mentor-mentee system can be set up, or assignments be delegated on a rotation basis for tasks and activities that are seldom performed, for example, budget analysis which is conducted only once at the beginning of any project. The increase in the frequency of performing a task or activity will help build confidence and encourage the pursuit of further knowledge and skills in that particular area.

More effort should also be given into involving ID practitioners in the decision making process. Although the ultimate decision should still belong to the management team, all ID practitioners should be allowed the freedom to challenge the decisions of management or senior/experienced ID practitioners in the team. This way, ID practitioners will not end up blindly following an ID model or process just because they were told to do so. Involvement in the decision phase will help to create awareness concerning the relevancy and significance of the ID practice in a profit-oriented business world.

Professional development has long term benefits to both the individuals as practitioners and to their organization. Management, leaders, team mates, and ID practitioners themselves should encourage each other to set aside time to focus exclusively on their own professional development. Perhaps, as suggested by [9], professional development activities can be embedded into the daily work routine of ID practitioners, not "in addition" to their professional work. Perhaps companies can implement a flexible work schedule to include professional development activities, such as time-off work to attend conferences and seminars. Or the organization can provide monetary support to help build ID knowledge and skills, for instance sending ID practitioners for external trainings or subsidising fees for online memberships to e-learning associations, such as the American Society for Training and Development and eLearning Guild. In Malaysia, companies may make use of the Human Resource Development Fund which is tax deductible, making it a win-win situation for both employers and employees.

V. CONCLUSION

The practice of instructional design is active and quite prevalent in the Malaysian workforce today. To enable its growth, the current workplace culture needs to be transformed to include the ID career field. The continuing professionalization of ID practitioners in the workplace

requires the cooperation of the practitioners, their employers, higher education institutions, governing bodies, and other sources of expertise. It is hoped that a learning community of practice is set up among the practitioners in Malaysia wherein the main focuses are to help develop knowledge and skills, provide avenues for professional development, and present networking opportunities. Only then will the ID profession be further established and recognized in the country.

REFERENCES

- [1] R.A. Reiser, "A history of instructional design and technology: Part I: A history of instructional media". *Educational Technology Research and Development*, 49(1), 2001, pp. 53-64.
- [2] R. Kenny, Z. Zhang, .A. Schwier & K. Campbell, "A review of what instructional designers do: Questions answered and questions not asked". *Canadian Journal of Learning and Technology*, 31(1), 2005, pp. 2-26.
- [3] J. Wedman & M. Tessmer, "Instructional designers' decisions and priorities: A survey of design practice". *Performance Improvement Quarterly*, 6(2), 1993, pp. 43-57.
- [4] M.B. Larson, "Instructional design career environments: Survey of the alignment of preparation and practice". *TechTrends*, 49(6), 2005, pp. 22-32.
- [5] M.B. Larson & B.B. Lockee, "Preparing instructional designers for different career environments: A case study". *Educational Technology Research & Development*, 57(1), 2009, pp. 1-24.
- [6] R.A. Schwier, & J.R. Wilson, "Unconventional roles and activities identified by instructional designers". *Contemporary Educational Technology*, 1(2), 2010, pp. 134-147.
- [7] M. Allen, "A profile of instructional designers in Australia". *Distance Education*, 17(1), 1996, pp. 7-32.
- [8] C. Macpherson & A. Smith, "Academic authors' perceptions of the instructional design and development process for distance education: A case study". *Distance Education*, 19(1), 1998, pp. 124-141.
- [9] E. Cheong, M.C. Wettasinghe, & J. Murphy, "Professional development of instructional designers: A proposed framework based on a Singapore study". *International Journal on E-Learning*, 5(2), 2006, pp. 197-219.
- [10] International Board of Standards for Training, Performance and Instruction, *Instructional design competencies: The standards*, www.ibstpi.org, 2010.
- [11] K. L. Gustafson, & R. M. Branch, *Survey of instructional development models*. (4th edition). ERIC Clearinghouse on Information & Technology, Syracuse, NY, 2002.