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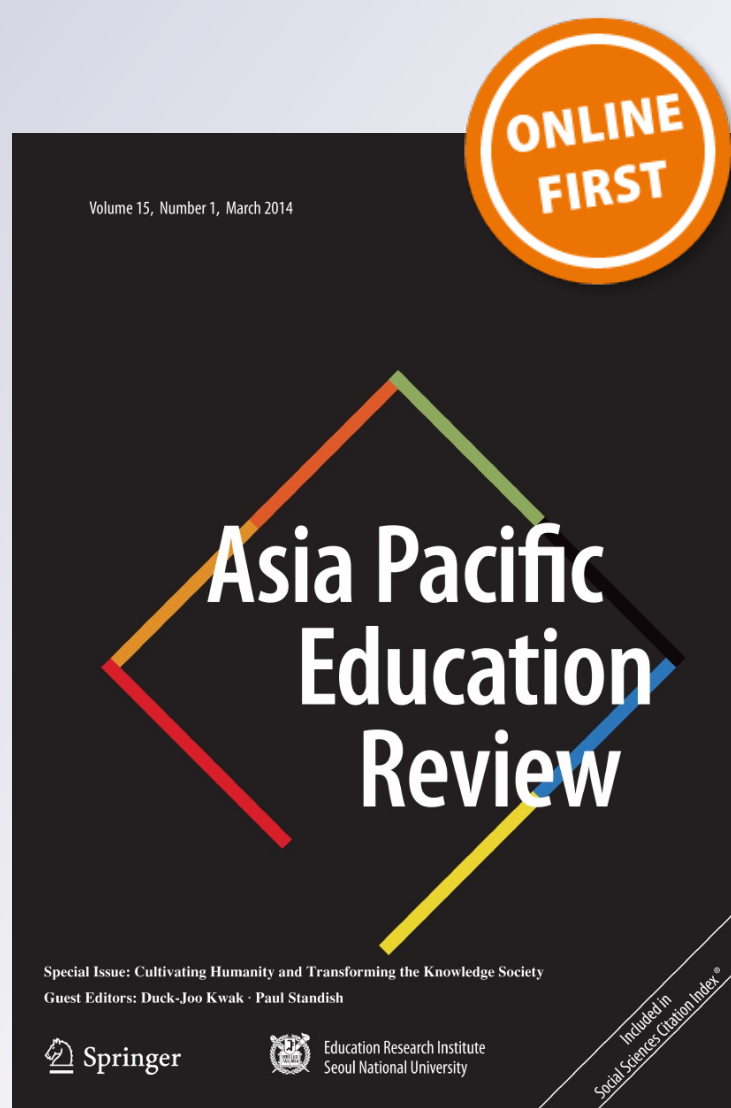
**Jessie Ee**

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# Modifying Defining Issues Test (DIT) as a tool for assessing secondary students' social–emotional competencies

Jessie Ee

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**Abstract** This paper discusses the use of an alternative instrument to assess the social–emotional competence (SEC) of secondary school students in Singapore. The instrument was used in a larger study to explore an approach to infuse social–emotional learning in the curriculum for children in school. The design of this research instrument is based on the Rest's (Development in judging moral issues. University of Minnesota Press, Minneapolis, 1979) Defining Issues Test (DIT) originally developed based on Kohlberg's moral dilemma (Kohlberg in child psychology and childhood education: a cognitive developmental view. Longman, New York, 1987). The modified DIT instrument which focuses specifically on social–emotional development presents scenarios that are most likely encountered by adolescents and seeks the students' responses to five open-ended questions related to the scenarios. The verbatim written responses were coded and categorized to assess their SECs. The instrument was able to elicit the self-management strategies of the secondary students, which was not as easily assessable with alternative instruments measuring SECs. The findings also highlighted the psychosocial developmental stage and moral development of the adolescents in the study from the SEC responses that they made.

**Keywords** Social–emotional competence · Defining Issues Test · Secondary students · Moral reasoning · Responsible decision making

## Introduction

It has long been established by CASEL (2005) that children's social–emotional competence (SEC) is important to their development, not only from the psychosocial and moral dimensions but also the academic as well as general growth and success in life. This has prompted the need to develop suitable and effective measures to determine the status of their SEC in order to identify their strengths and weaknesses, so that appropriate intervention programs can be designed and implemented to help them develop these competencies more effectively. This paper presents a study that used the Defining Issues Test (DIT) to assess the SEC of students at the secondary level who are at the adolescence stage in their psychosocial development.

## Importance of fostering social–emotional learning

A number of researchers have noted that children with more positive profiles of SECs not only have more success in developing positive attitudes about school and successful early adjustment to school, but also improved achievement (Cohen 2006; Zins et al. 2004). Social–emotional learning (SEL) has been found to play a crucial role in the mental health and well-being and academic achievement and success of the individual (Bandura et al. 2001; Malecki and Elliott 2002; Zins et al. 2004).

In a recently completed meta-analysis of 270 SEL programs that promote SECs, it was found that SEL interventions significantly improved students' attachment and attitudes toward school, leading to better social attendance, higher motivation, and higher morale (Durlak and Wells 1997; Zins et al. 2004), while decreasing rates of violence/aggression, disciplinary referrals, and substance use

J. Ee (✉)  
National Institute of Education, Nanyang Technological University, 1 Nanyang Walk, Singapore, Singapore  
e-mail: jessie.ee@nie.edu.sg

(Weissberg and Elias 1993). Wang et al. (1997) have also argued that social and emotional skills and behaviors are among the most influential factors in student learning.

In Erikson's life-span developmental theory (Erikson 1963), an individual's psychosocial development progress through eight stages, each of which is characterized by a psychosocial challenge or crisis from which will determine one's competence in an area of life. If the stage is handled well, the individual will feel a sense of mastery, but if managed poorly, the individual will emerge with a sense of inadequacy that may affect his/her development in the later stages. Adolescents are at the Industry versus Inferiority stage and Identity versus Role Confusion stage of psychosocial development. During these two stages, children want to be studying hard to achieve success academically while learning to become more independent as an individual. Their main developmental tasks are school related along with friendship formation. The scope of their activities and experiences is expanding beyond the confines of the home. The positive outcome of this stage will see a child who is competent with respect to school work and have the requisite social skills to interact appropriately with others in his environment. As they approach the Identity versus Role Confusion stage, they are mainly concerned with being part of a peer group and adjusting to their physical and social maturation. There would be a lot of exploration and experimentation with respect to friendships and peer groups as well as parental involvement and influences in their lives and activities in the process to discover who they really are. At this stage of identity formation process, they would impact on the development and success of the later stages in their lives. If developed positively during these two stages, they will be industrious and have skills and competence to work productively as well as possess strong moral identity to guide them into adulthood and are likely to be more independent in their thinking and actions.

Other studies of SEC have focused on the relationship between cognitive development and social behavior. According to Kohlberg (1987), the development of moral reasoning moves progressively through three levels: pre-conventional, conventional, and postconventional moral reasoning. When a moral dilemma is encountered, individuals who find their current level of reasoning inadequate or unsatisfactory will look to the next level. Children are typically at the pre-conventional level (age 4–10 years) when the reasoning and decision choices are based on the avoidance of punishment and the receipt of rewards. These rewards and punishments are based on rules imposed by significant others, for example, their parents and teachers, rather than are internalized by them. The primary focus is self-serving rather than for others although they are beginning to realize that others also have needs and

feelings. Hence, they would negotiate and exchange favors or satisfy others' needs as long as the tasks are not in conflict with their personal interests. In the conventional reasoning level, that is, typical of late childhood and early adolescence (age 10–13 years), societal rules and conventions regarding right and wrong, namely the family expectations, traditions, and laws, are accepted even when there is no reward or punishment. They believe that laws are inflexible, and it is their duty to obey them. The primary concern is to please others, especially the authority figures as they are concerned with maintaining relationships through sharing, trust, and loyalty. In the post-conventional level (beyond 13 years of age), society's rules and convention are now perceived as relative and subjective rather than authoritative. These are considered in relation to abstract principles that they gradually imbibe, such as human rights, liberty, and justice. They now listen to an inner conscience and may break rules that are not congruent to their own ethical principles.

Given the understanding and importance of SEC, it is then important to ensure that children's development is appropriate and supported positively, so that they grow up with the right values and attitudes to become confident and well-adjusted adults in the future. Schools must facilitate the SEL in students with suitable intervention approaches and programs. Consequently, the availability of an appropriate and valid measurement of SEC is critical to determine the status of students' SEC before and after the implementation of the intervention program to appropriately evaluate its effectiveness.

### Current approaches to measuring SEC

Over the past two decades, dramatic progress had been made in the conceptualization and measurement of the social-emotional functioning in children of different ages. In addition, researchers have also acquired a deeper understanding and appreciation of some inherent challenges when conducting social-emotional or mental health evaluations. Two separate but related approaches, namely self-report surveys and third-party behavioral observations, have been adopted to measure the SEC. Self-reports are used mainly for the purpose of identifying the child along a continuum of competent to incompetent in the various SEC scales. The composite score on the scale indicates the level of one's SEC. Popular scales adopted by researchers in different age groups include the Emotional Competence Inventory (Goleman 1998), the Social Skills Improvement System (SSIS) Rating Scales (Gresham and Elliott 2008), the Social-Emotional Assets and Resilience Scales (Merrell 2008), and the Social-Emotional Learning Scale (Coryn et al. 2009).

The second commonly used method of assessing the social–emotional behavior of young children in naturalistic settings is systematic behavior observation (Lehr et al. 1987). Usually teachers, parents, or other caregivers record the frequency of the occurrence of certain behavior according to a behavior checklist that reflects adaptive social functioning in children. This approach is preferred by some researchers as it directly measures the behavior of interest, without imposing artificial test demands to which children are known to be highly reactive. The observations provide data that are less likely to be distorted by the expectations and biases of parents and teachers (Doll and Elliott 1994).

The efficacy of self-report surveys is limited in that they only require the respondent to indicate his/her level of social–emotional development and do not elicit the specific factors that contribute to it. Furthermore, responses were restricted to prescribe statements, thus limiting the scope of responses and may not truly represent their own thoughts and values. On the other hand, the observational approach is limited by the subjective definition of the “socially competent” behaviors to be observed (Foster and Ritchey 1979). Initial attempts simply defined behaviors a priori as theoretically appropriate indices of SEC based on the high face validity. Here, certain important behavioral indicators and even wrong behaviors may be selected. Doll and Elliott (1994) noted that at least five observations are required to present children’s social behavior reliably. Like with the self-report approach, the focus on *behavior* does not reveal the reasoning behind the target behavior, thus raising further challenges in the interpretation of the data and formulation of suitable strategies to address observed problematic behavior. Furthermore, both surveys and behavioral observations are often framed in a general context, thus requiring respondents or observers to use heuristic and other decision-making processes to make an inference of the response (Tourangeau 1984). Finally, it is important to note that the multiple dimensions of SEC are not orthogonal and can operate at the same time in one situation. Current ways of analyzing survey and behavior data do not take this into consideration and hence are unable to present a full story. Hence, they are not sufficient as the sole method of assessing SEC, although they are particularly useful both for screening and for socially validating behavior change.

### Defining Issues Test: a scenario-based instrument to assess SEC

DIT is a new approach aimed at providing a valid means for assessing different aspects of SEC, while demonstrating the importance of integrating knowledge about the individual’s cognitive moral development and social–

emotional functioning within the contexts of his/her cultural values and beliefs. Research employing DIT has been extensive and multifaceted (Nucci 2002). Grounded upon Kohlberg’s six-stage moral reasoning theory (Kohlberg 1987), it originated as an alternative to his semistructured interview measure of how adolescents and adults come to understand and interpret moral issues (Rest 1979). Similar to Kohlberg’s moral judgment interview, the DIT assessment process begins with presenting participants with scenarios that involved a moral dilemma (e.g., the story of Heinz and the drug). Typically, participants are asked to rate on a three-point scale what the protagonist should do and rate on a five-point scale 12 short issue statements drawn upon Kohlberg’s six stages. Following these ratings, participants are tasked to rank the four items that best reflect their thinking about how the protagonist ought to solve the dilemma (Thoma 2006). Using Rest’s (1979) four-step model for ethical decision making, participants need to (1) recognize an ethical dilemma; (2) evaluate the alternatives; (3) make a decision; and (4) act on the decision. This would involve moral reasoning, moral judgment, and moral behavior.

Scenarios have been used to elicit responses about one’s social–emotional competencies in at least three studies. Bauminger et al. (2005) used scenarios to tap fourth-to-sixth graders’ social information processing skills (SIP). Four social vignettes, which focused on peer entry, provocation by a child, provocation with a child victim, and friendship, were read aloud to the child individually, followed by a series of questions. Children’s responses were coded to infer the levels of their SIP skills. In another study, Kam et al. (2004) used three different hypothetical vignettes that depicted being teased, being rejected from a group, and having an object taken away by a peer to assess children’s social thinking skills. The respondents were asked what they thought would happen next in the story, whether they thought they could solve the problem, and what they would do or say in such a situation. Each alternative response given by a child was coded for its level of effectiveness. Scores for each alternative were then summed within each of the three stories and across stories to produce a total effectiveness score. In a third study, Burgess et al. (2004) used five vignettes to measure children’s emotional reactions (e.g., *How would you feel if this really happened to you?*), and coping strategies (e.g., *How would you deal with this situation if it happened to you?*) in hypothetical situations with a peer or the best friend. For each question, the child was instructed to choose one answer from the situation-specific choices that were provided.

A recent study of the SECs of Singaporean primary school children (Zhou and Ee 2012) was conducted using the DIT. It focused specifically on social–emotional



development by presenting one scenario in which a fourth grader witnessed his best friend being bullied in school. Responses to the open-ended questions related to the scenario were categorized into one of the five SEC defined in the Ministry of Education (MOE) SEL framework (MOE 2008). The findings showed that children could react morally responsible and make ethical, constructive decisions in such a situation. One-third of the responses showed the lack of ability to weigh the consequence of their choices, and as such, the decisions did not carry positive values. Children generally showed good self-management (SM) skills by trying to calm down when they were called names or reflecting on their own misbehavior for not helping the victim. Many children reported good relationship management (RM) skills by offering assistance to the victim, while some chose to walk away and ignore the situation as they felt that they were not able to handle the situation and should get the help of their teacher or an adult. A majority of children was able to empathize with the victim and his friend who saw the scene. This evidenced a high level of social awareness (SocA).

### The present study

The rationale for the current study was strongly influenced by recent developments in SEC. The study was designed in a similar manner as in the research by Zhou and Ee (2012). The aim was to generate a new measure to provide a valid means for assessing different aspects of one's SEC, and to demonstrate the importance of integrating knowledge about the cognitive moral development and social-emotional functioning within the contexts of the adolescents' cultural values and beliefs.

Based on the CASEL (2005) SEC framework, the Singapore MOE SEL Framework (MOE 2008) defined SEC as the possession of a range of capabilities to recognize and manage emotions, develop care and concern for others, solve problems effectively, establish positive relationships with others, and make responsible decisions to handle challenging situations effectively. Specifically, it comprised five SECs—namely self-awareness (SA), SocA, SM, RM, and responsible decision making. SA assesses one's feelings, interests, values, and strengths; SM concerns the regulation of one's emotions to handle stress, control impulses, and perseverance in overcoming obstacles; SocA concerns the ability to take the perspective of and empathize with others; RM concerns the establishment and maintenance of healthy and rewarding relationships based on the cooperation; and responsible decision making (RDM) based on considerations of ethical standards, safety concerns, appropriate social norms, respect for others, and likely consequences of various actions.

## Methods

### Participants

A total of 802 secondary one and two students (mean age = 13.71 years old; 53.5 % boys) in three secondary schools in Singapore participated in the study using the DIT questionnaire.

### Procedure

The scenario was presented in printed form, with spaces provided for the participants' written responses to each guiding open-ended question. They were encouraged to write how they believed the character in the scenario might respond to the described situation and were also asked how they personally would think, feel, or react in a similar situation. Basically, the participants are assessed on their responses to their awareness of an ethical dilemma on the manner Bill is using his computer. Also, whether they are able to evaluate the situation and make morally responsible decisions if they were in Bill's situation. Thus, it is to assess participants' moral reasoning, moral judgment, and moral behavior through their social-emotional competencies and the values that they adopted. Instructions were kept to a minimum in order to ensure that the linguistic flavor and content were understood by the participants. Their responses were collected immediately after the DIT was administered.

### DIT measure

For the present study, the adapted DIT focused specifically on students' social-emotional development. The scenario described a situation and the activities that adolescents are familiar with, namely obsessive playing of computer games and having to prepare for exams. Five open-ended SEL questions were asked following the scenario to elicit answers that covered one or all of the core aspects of SEC.

Bill spends hours on the internet. He knows his examination is near and that he needs to study and prepare for his coming papers. However, he has much difficulty breaking himself free of the computer. His parents are aware of his obsession and banned him from using the computer for more than an hour each day. However, he has even hacked the system, so that he could use it when they are not around. He would constantly say this will be his last game but he just could not help himself. There are times, he would stay overnight to play the games and go to school all worn out, sleepy, and tired. He is in dire straits right now with the approaching exams coming and the

**Table 1** Responses to the question “What can you learn from this scenario?”

Categories of responses	Example responses	SEC domains	%
Self-control	From this scenario, I can learn that internet has a good use but it also can be bad and addictive for you. Therefore, we need to learn to control ourselves	Self-management	8.6
Time management	I have learnt to make a timetable to have time for everything	Self-management	7.1
Listen to parents	To try not to use the computer all the time and listen to our parents' advice	Responsible decision making	1.4
Get help from others	He is addicted and needs help from people to either talk with him or keep him busy so that he would not play computer	Responsible decision making	0.5
Do not get addicted	I learn that we cannot use the computer too long or not we will be addicted and will affect our study	Responsible decision making	28.9
Focus on studies	Studies are more important than computer games	Responsible decision making	10.8
Other values	I have learnt not to make empty promises and always be honest	Self-awareness	1.2
Issues related to self	I have learnt that spending hours on the internet is not good for me and my health	Self-awareness	2.9
General issues	Computer games can be an obsession	Self-awareness	13.5
Effects on Bill	What I learn from this scenario was if Bill continues to play games and neglects his studies, he might fail his exams, and in the end, he will regret not to study hard at first	Social awareness	1.4

Example responses are presented in their original form without corrections to spelling, grammar, and punctuation

constant monitoring of his teachers in class and his parents at home. But, he just cannot resist the internet. He is wondering if he should now use the public library to play his games.

The five follow-up open-ended questions are

1. What can you learn from this scenario?
2. What do you think are the consequences of Bill's actions?
3. How can Bill control his obsession with the internet?

**Table 2** Responses to the question “What do you think are the consequences of Bill's actions?”

Categories of responses	Example responses	SEC domains	%
Health issues	He could get myopia. His eyesight can be poor	Social awareness	21.7
Academic issues	A drop in grade in the coming exam, after losing focus in class	Social awareness	80.9
Relationship issues	His parents and teachers will be extremely disappointed in him	Social awareness	9.0
Punishment or monitoring	He might be punished and he could be tired and worn out for activities	Social awareness	9.9
Future affected	He will not have a good future if he keeps failing his exams	Social awareness	5.6
Finance issues	The electricity bill will also cost a lot of money	Social awareness	1.4
Bad attitude/behavior	Bill's temper would also be bad due to the games he played	Social awareness	1.9
Addiction worsen	His consequences that he could not control himself when he playing computer games	Social awareness	3.9
Regret or sad	Bill will regret not to study hard when he grow older next time	Social awareness	2.4

Example responses are presented in their original form without corrections to spelling, grammar, and punctuation

4. What effect will Bill's obsession have on himself, his parents, and his future?
5. What would you do if you were Bill? Why?

A Likert scale was not used to obtain scores as an indicator of children's SEC levels to avoid influencing the respondents to an unknown extent with the quantitative items.

### Data analysis

Students' qualitative responses to each question were gathered based on content or conceptual similarities. These categories of responses are manually coded (as indicated in Tables 1, 2, 3, 4, 5) and attached to one of the SEC labels—namely SA, SM, SocA, RM, and RDM. Subsequently, it is further analyzed by the research committee if it was reflective of participants' moral reasoning, moral judgment, and moral behavior. To calculate inter-rater agreement for the coding, two raters independently coded the same randomly selected sample comprising 59.4 % of children's responses. Inter-rater agreement was 90.4 %. All disagreements were discussed until the raters reached agreement. Percentages were also calculated for each category coded among the sample. The results were presented in Tables 1, 2, 3, 4 and 5 for each follow-up question, respectively.

**Table 3** Responses to the question “How can Bill control his obsession with the internet?”

Categories of responses	Example responses	SEC domains	%
Passive reduction	His parents should lockup the computer and keep the key with them	Self-management	22.7
Active reduction (to seek help)	He can ask his parents or teacher and go for counseling	Self-management	9.1
Active reduction (time management)	Bill could make a schedule for himself to control his obsession with internet	Self-management	29.6
Active reduction (other hobbies/activities)	He can do more outdoor activities, so that she could control his obsession	Self-management	38.5
Unspecified/general self-control	He could try not to see the computer games	Self-management	6.5
Self-reflection	He should learn that being obsessed with the computer will only lead him nowhere, and try to think, consider about his future	Self-awareness	2.5

Example responses are presented in their original form without corrections to spelling, grammar, and punctuation

**Table 4** Responses to the question “What effect do you think Bill’s obsession will have on himself, his parents, and his future?”

Categories of responses	Example responses	SEC domains	%
Negative effect on self	He will be too tired in school and will fall asleep in class while he will fail in examinations if he did not listen much to his teacher	Social awareness	60.5
Negative effect on parents	His parents have to support him	Social awareness	52.6
Negative effect on future	In future, Bill might not be able to find a good job because of his academic results	Social awareness	62.2
Positive effect	Bill want to be a game maker or animation director	Social awareness	0.6

Example responses are presented in their original form without corrections to spelling, grammar, and punctuation

**Table 5** Responses to the question “What would you do if you were Bill? Why?”

Categories of responses	Example responses	SEC domains	%
Passive reduction of usage	I would keep the computer away from myself if I were Bill	Responsible decision making	8.0
Active reduction of usage (to seek help)	I would try to talk to my form teacher or counselor on how to control myself from being so addicted to using computer	Responsible decision making	6.2
Active reduction of usage (time management)	I would set a timetable for me to organize my time	Responsible decision making	20.3
Active reduction of usage (other hobbies/activities)	If I were Bill, I will study first. When it is stress, just walk or listen to music for 5 min, then go back for study	Responsible decision making	39.8
Unspecified/general self-control	I would stop myself from playing the computer	Responsible decision making	24.4
To listen to parents	I would listen to my parents and not disobey their rule	Responsible decision making	1.6
To study computer-related courses	In the future, I will just study computer-related courses	Responsible decision making	0.1
To commit suicide	I will suicide	Responsible decision making	0.4
To continue being obsessed	I will play more computer, and I would not be a computer addict/hacker	Responsible decision making	0.9
<i>Why?</i>			
Understanding importance of studies	Because what we need to do now is to study and not play	Self-awareness	16.6
Understanding the consequences of behavior	Because I know being addicted to computer all the time wastes time	Self-awareness	27.4
Controlling the addiction	As this goes on, I will feel very not addictive and start concentrating more	Self-awareness	20.0
To enjoy after working hard	I would only play games on weekends and when exams are over as when exams are over, I would not have to worry as my exams are over	Self-awareness	3.1
Appreciating other’s feelings	At the same time, I do not want to bring disappointment to my parents, who brought me up, gave me things I wanted, gave money for spending and education	Social awareness	4.0

Example responses are presented in their original form without corrections to spelling, grammar, and punctuation



## Results

### Question 1: What can you learn from this scenario?

Lessons students gained from this scenario were wide-ranging (Table 1); 41.6 % of the students reflected RDM as they suggested that the actions that can be taken to check the situation included listening to parents, getting help from others, focusing on studies, etc. Responses from 15.7 % of students' reflected SM competency like the need for self-control and time management while 17.6 % of the students' responses reflected SA, e.g., "spending hours on the internet is not good for me and my health." Only 1.4 % of them demonstrated social awareness when they suggested Bill may fail his exams and will regret his addiction later.

These findings are consistent with the Convention level of Kohlberg's (1987) moral reasoning. Given that the mean age of the respondents was 13.7 years, it was not surprising that on the one hand, they wanted to enjoy themselves, but on the other, they did perceive the situation as problematic with respect to the expectations of the parents and society in terms of gaining academic competence in youth before venturing to other aspects of life. They knew that the behavior was not desirable and were hence in a quandary as to whether they should continue or stop playing. While they had a variety of suggestions that might help the character to stop his addiction, only a very small proportion would listen to the parents (1.4 %) or get help from others (0.5 %). These responses did not deviate much from stage 5 of Erikson's (1963) framework of psychosocial development, i.e., Identity versus Role Confusion in which the individual is trying to develop his own identity and reduces his/her reliance on significant others like his/her parents and teachers for guidance and assistance.

### Question 2: What do you think are the consequences of Bill's actions?

All the responses reflected a strong sense of SocA. The majority of the responses was focused on Bill himself, specifically the consequences identified included academic consequences (80.9 %), e.g., drop in grade in coming exams, health issues (21.7 %) such as eyesight being affected, self-regulation issues (3.9 %) such as not being able to control the addiction, bad behavior (1.9 %), and regret (2.4 %). Only about one in ten students (9.0 %) mentioned consequences on others like parents and teachers (in terms of disappointment) while 9.9 % actually said that punishment may result. About 5.6 % could project the consequences beyond the immediate (e.g., not have good future, regret not studying hard in old age) while a small proportion (1.4 %) could even suggest the consequence of higher utility bill (Table 2).

It can be seen that the majority of the responses was typical of the egocentric youths at stages four and/or five of Erikson's life-span development (1963) as the consequences they identified concerned themselves more than others. However, it can also be seen that they are more socially and morally aware of the consequences of their actions on their relationship with significant others, e.g., their parents rather than just on their immediate academic consequences. This reflects higher moral reasoning and judgment. A small proportion even went as far as to suggest consequences related to their future success (5.6 %) as well as financial issues (1.4 %). These concerns also reflected the conventional level of Kohlberg's moral reasoning (1987) in which the rules and expectations of the family, school, and society are being referenced. However, a small proportion (9.9 %) of the respondents was still at the preconventional level of moral reasoning during which a major impetus of action is the avoidance of punishment.

### Question 3: How can Bill control his obsession with the internet?

The suggestions (Table 3) reflected good SM as the ideas for control of obsession with the use of computer were largely what Bill should do, for instance, manage his time (29.6 %), engage in outdoor activities (38.5 %), stay away from computer games (6.5 %), and reflect on the negative impact of the addiction on his future (2.5 %). Furthermore, most of the suggestions tended to be active (83.7 %) rather than passive in nature reflecting their sense of self-efficacy. For suggestions involving parents, 22.7 % would get parents to lock the computer, a passive reduction of usage, while 9.1 % would seek their counsel.

These suggestions showed that most of the students were growing in maturity as they were able to make some sound moral judgments on how to cope with such behaviors. Their ability to take constructive actions to control their inappropriate behaviors rather than rely on others to manage the situation reflects their quest for autonomy and independence and their sense of self-efficacy (Erikson's stage five of psychosocial development). The suggestions were typical of and congruent with what is expected of them by the parents, schools, and society in general, reflecting Kohlberg's conventional moral level (Kohlberg 1987). Hence, it can be inferred that most students were able to make good moral judgment and being able to act on them as they were able to consider active and workable coping strategies that they would personally undertake when faced with situations that were not so desirable. However, the few respondents who suggested actions that were more passive in nature reflected poorer self-efficacy, which would need to be adjusted or corrected to ensure greater probability of success as suggested in the recent growth mindset proposed by Dweck (2006).

Question 4: What effect do you think Bill's action will have on himself, his parents, and his future?

The majority of students could identify negative effects of Bill's action (Table 4); 62.2 % of the responses were related to Bill's future; another 60.5 % reflected negative effects on his health and academic performance as compared to only 52.6 % who recognized the negative effects on the parents. Of the responses relating to Bill, there was not much difference between the proportion indicating negative consequences on his health and academic performance (60.5 %) and his future (62.2 %). A small group (0.6 %) could actually anticipate the positive outcomes of computer-playing by suggesting that they could end up in an IT industry. This shows the depth of analysis of the small percentage of respondents, a reflection of their ability to reference their actions from a more optimistic and creative perspective.

Hence, it can be seen that students were more egocentric as they entered into adolescence as they focus more on the effect on Bill and his parents rather than other external social perspectives except the 0.6 % who perceive Bill may end up in an IT industry. This lack of SocA may reflect that many of these adolescents may still be in a very sheltered and protective home environment and lack greater exploratory experience in secondary 1 and 2. Being young adolescents with a lack of experience on personal crisis, they may conform to the values of their parents and peers. Their ability to be able to identify with Bill's academic and health issues suggests that they can identify it to their current experience. This indicates their level of empathy and SocA, which may reflect their conventional moral reasoning level (Kohlberg 1987) at this stage.

Question 5: What would you do if you were Bill? Why?

This final question focused primarily on the moral actions and the underlying rationale for the action to be taken by the respondents if they were to be in a similar situation. The actions were then categorized as passive and active, depending on the role they played in the suggested solution. The responses were also categorized as more positive or negative in nature (refer to Table 5).

The coping suggestions were relatively more active and positive in nature, indicating their sense of self-efficacy, for example, they would distract themselves and get involved in other hobbies/activities to reduce their addiction (39.8 %), exercise control of themselves (24.4 %), learn to manage their time (20.3 %), and seek help from the teacher or councilor (6.2 %). Only 1.6 % said that they should listen to their parents reflecting less reliance on the parents to guide them. These responses were consistent with Erikson's adolescence stage of Identity versus Role Confusion (1963) in their psychosocial development. The

strategies suggested also reflected the conventional level of their moral reasoning (Kohlberg 1987) as they tended to be ideas that were congruent with the expectations of parents, schools, and the society. About 8.0 % of the responses felt that the solution would be to keep the computer away, a passive reduction of usage strategy. A small proportion (0.1 %) of the respondents was able to see the positive outcome of the computer game playing leading to the study of computer-related courses.

Two suggestions that were of concern were "I will commit suicide" and "I will play more computers and would not be a computer addict/hacker". The implication is that the former respondent might not have appropriate coping strategies to handle the situation while the latter lack SocA that the perceived persistent playing may lead to addiction, which may be socially and potentially problematic. With these respondents, the SEL intervention programs would be slightly different from that for the rest of the respondents. More focus would have to be placed on SM coping strategies and the ability to identify appropriate consequences of their actions whether they be positive or negative.

The rationale given for the suggested actions were also predominantly related to themselves, e.g., 27.4 % of the students acknowledged that being addicted to the computer would be wasting their time, 20.0 % of them felt the need to control the addiction, 16.6 % of them emphasized the importance of studies and that they were expected to be studying at this point of time in their lives, with 3.1 % stating that they would prefer to play and enjoy only after the examinations were over. Only 4.0 % of the students mentioned that the reasons behind their actions were related to others particularly their parents, e.g. "At the same time, I do not want to bring disappointment to my parents, who brought me up, gave me things I wanted, and provided money for my education."

Hence, these responses have confirmed again the Identity versus Role Confusion stage of life-span development (Erikson 1963) and conventional moral reasoning Level (Kohlberg 1987). Most of them are independent and self-efficacious and would personally take positive actions to keep an undesirable situation in control, thus they possess good moral reasoning and judgment that may result in positive moral behavior in the near future. They would reduce their reliance on the significant adults in their lives to establish their autonomy. Consistently, the role of parents was minimal as they transit into adulthood and in developing their own identity. In terms of SEC, they reflected good SA and SM as well as good SocA and RDM.

## Discussion and conclusion

The findings showed that students at the secondary level do display social-emotional characteristics and moral values

that are consistent with Erikson's stage 4/5 of psychosocial development (1963) and convention level in their moral reasoning (Kohlberg 1987). At this early adolescence stage, they are beginning to discover who they are and starting to reduce their reliance on their parents and other adults to guide and help them solve some of the dilemmas that they encounter in their lives. It is also evident that their concerns are concentrated not only on academic issues but also health and relationship matters. Some have even indicated concerns related to their future, reflecting their growing maturity. There is still a small group of students who would avoid punishment in their decisions and actions, reflecting that they are at the preconventional level of moral reasoning (Kohlberg 1987). Parents and teachers may need to provide more quality discussion with adolescents on current affairs in their society and involve them in community services for greater experiential learning. Students had also shown that they had a variety of active and positive coping strategies and were able to exercise morally, RDM, self-control, and SM to deal with the undesirable situations and their consequences. With respect to relationships with others, they did display social awareness but not much of RM perhaps because the scenario and follow-up questions did not probe for these responses.

With respect to the DIT itself, some of the follow-up open-ended questions, e.g., questions 2 and 4 and questions 3 and 5 appeared to be overlapping at a glance. These were deliberately designed to ensure that the respondents focused on the areas of interest in this study, namely the analysis of the situation to determine the consequences and hence its severity and the actions to be taken to check the situation. These responses would facilitate an understanding of the SECs and the underlying psychosocial and moral reasoning concerns of the respondents.

A major question about the DIT is whether the information it gathers is sufficiently nuanced to address the subtleties of social-emotional research. For instance, only question 5 in this study asked for reasons for their responses; the other four questions did not probe into the responses to ascertain the rationale and thus thinking and values underlying the responses. Here, the opportunity to truly understand their thinking and inclinations guiding their responses was lost. Furthermore, it is also possible that the response is merely a cognitive recall, comprehension and application of something they had been taught in the civics and moral education program over the years rather than some values that they held. In the coding stage of the data processing, each response is categorized into one of the five SEC, namely SA, SM, SocA, RM, and RDM. This did not take into consideration the inter-relatedness of the five SEC. For instance, it is possible that a response like RDM may be due to SA and/or SM. It could also be due to SocA and/or RM. However, these limitations

can be easily overcome with more deliberate planning and design of the scenarios to provide the platform for the manifestation of the targeted SECs. The inclusion of additional questions such as "Why do you think so?" or "Why do you say that?" would help reveal the underlying thinking of the responses and hence better probe into the different components of SECs and the corresponding values that guide their decisions.

Hence, it can be concluded that the thoughtful design and construction of the scenarios and follow-up open-ended questions can elicit spontaneous responses that provide reliable and valid information about the respondents' moral reasoning and psychosocial development. This has also been reflected in Zhou and Ee (2012) although the scenario on bullying was used for elementary students. These conclusions would then inform the customization of any intervention program to ensure the success of their SEL. The DIT may thus be seen as a valid instrument to assess the multiple aspects of moral sensitivity and SEC of students compared with the other two methods, namely self-report surveys and third-party behavioral observations. The DIT is able to assess the adolescents' ability to take the perspectives of others, generating interpretations and options, identifying the consequences of actions and options, and suggesting ways to SM the situation where the survey questionnaire and even the SEL camp failed to address in the larger SEL study. It is also applicable to both students at the primary and secondary levels and can be used in pre- and posttests to evaluate the effectiveness of the intervention program to facilitate SEL of students. Furthermore, even if there is doubt of what the adolescents may say and do from the DIT survey, the parent survey revealed that parents in the intervention group noticed improvement in their children's moral and social-emotional competencies unlike parents in the control group.

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